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Genus Caelorinchus Giorna

Caelorinchus Giorna, Mém. Acad. Sci.
Torino, vol. 16, p. 179, 1805-8. (Atypic.;
"Coelorhynche la ville". Type
Lepidoleprus caelorhynchus Risso,
tantotypic.)

Coelorhynchus Agassiz, nomencl. Zool.
Genera Animal., Pisces, p. 10, 1846.
(Type Lepidoleprus caelorhynchus
Risso.)

Krohnus Cocco, Intorn. Pesc. Messina
(Lettere A. Cocco A. Krohn), p. 15, 144, 1844.
(Type Krohnus filamentosus Cocco,
monotypic.) (Larval.)

Oxymaerurus Bleeker, Verh. Kon. Akad.
Wet. Amsterdam, vol. 8, p. 370, 1874 (Type
Macrurus japonicus Schlegel, designated.)

Paramaerurus Bleeker, Verh. Kon. Akad.
Wet. Amsterdam, vol. 8, p. 370, 1874 (Type
Lepidoleprus australis Richardson, designated.)

Quincuncia Gilbert and Hubbs, Bull.
 U. S. Nat. Mus., No. 100, vol. 1, p. 432, 1920.
 (Type Coelorhynchus argentatus Smith
 and Radcliffe, orthotypic.)

Oxygadus Gilbert and Hubbs, Bull. U.
 S. Nat. Mus., No. 100, vol. 1, p. 515, 1920.
 (Type macurus parallelus Günther,
 orthotypic.)

Abyssicola Goode and Bean, Oceanic Ichth.,
 p. 417, 1895. (Type macurus macrochir
Günther, monotypic.)

Body with trunk short, usually less than head, compressed, tail long and tapering. Head compressed, large. Snout usually projecting, long, short or obtuse. Mouth wide, lateral, inferior, sometimes subterminal. Mandibular barbel present, often small. Teeth in villiform bands, varying above to but 2 or 3 irregular series and below to uniserial or irregularly biserial. Interorbital wide, flat. Suborbital ridge continuous to preopercle. Median rostral, occipital and postorbital ridges developed or prominent. Gill openings wide. Gill membranes broadly united in front, joined to isthmus, leaving very narrow fold. Gill rakers few, low spinescent

Chaetodon miharis Duoy and Gaimard.

Chaetodon miharis Duoy and Gaimard, Voy.
Arane, Zool., 1824, p. 380, plate 62, fig. 6.
Hawaiian Islands. — Cuvier, Hist. Nat. Poiss.,
 vol. 7, 1831, p. 28 (Hawaiian Islands). —
Kaup, Arch. Naturges., band 26, abth. 1, 1860,
 p. 154 (Hawaiian Islands). — Günther, Cat.
Fish. Brit. Mus., vol. 2, 1860, p. 31 (copied). —
Günther, Proc. Zool. Soc. London, 1871, p. 658
 (Manado). — Günther, Journ. Mus. Godeffroy,
 band 2-3, ^{heft} 5-6, 1874, p. 46, plate 35, fig. A
 (Hawaiian Islands). — Meyer, Ann. Soc. Espan.
Hist. Nat. Madrid, vol. 14, 1885, p. 17 (Manado).
 — Day, Fann. British India, vol. 2, 1889, p.
 7. — Weber, Siboga Exped., band 65, 1913, p.
 306 (Taam Island). — Uhl, Arch. Naturges.,
 band 89, abth. A, heft 5, 1923, p. 94 (Hawaiian
Islands, Hawaii). — Fowler, Bishop Mus.
Bull., no. 22, 1925, p. 28 (Honolulu), p. 34

tubercles on second gill arch,
still fewer on first gill arch.
Branchiostegals 6. Scales with
apical spinules, sometimes in
quincunx or again in parallel,
divergent or radiating ridges.
Scales along dorsal and anal
bases without enlarged spines.
Lateral line slightly arched
along side of trunk, axial along
side of tail. Second simple
dorsal ray pungent, often ends
in filament, front edge entire
or smooth. Interdorsal space
usually long. Dorsal, ventral and
pectoral origins often nearly in
same vertical plane, close behind
head. Pectoral with 13 to 19
branched rays. Ventral with 5
or 6 branched rays, outer simple

Chaetodon garretti Ahl, Arch. Naturges.,
band 89, abth. A, heft 5, 1923, p. 96

(on Günther 1874, plate 35, fig. A).

Samoa.

Chaetodon punctulatus Ahl, l.c., p. 97, plate
2, fig. 8. Ambonia and New Guinea.

Chaetodon guntheri Ahl, l.c., p. 99 (on
Günther 1871). Manado.

Chaetodon doloxus Ahl, l.c. (on Liénard).

Hawaii

D. ^{22 to} XIII, _{18 to} 23; A. ^{18 to} III, _{20 to} 20. Black ocular band
from predorsal to gill opening. Yellow,
with 10 or 11 vertical rows of dark brown spots.
~~Each scale of body with dark spot.~~ Black
bar on caudal peduncle. Fins yellow,
anal sometimes with black edge. Reaches

150 mm

Zanzibar, Hawaii, Madagascar, Ceylon,
East Indies, Melanesia, Polynesia,

Hawaii.

49699 U.S.N.M. Honolulu. Dr. O. P. Jenkins.

Type of Chaetodon mantelliger.

ray filamentous or somewhat prolonged, inserted before pectoral. Vent close to or remote from anal. One or 2 large fossae before anus, with well pigmented glandular body.

A large genus, of which half of the known species from the East Indian region. Though world wide in warm seas in depths of from 70 to 2200 meters they are usually found in depths of 800 meters or less. Likely when extensive deep sea collections are made in hitherto little known waters many more species will be found.

(Samoa). — Fowler and Ball, Bishop
 Mus. Bull., no. 26, 1925 (1926), p. 17
 (Laysan and French Frigate Shoals).
Chaetodon militaris Elera, Cat. Faun. Filip.,
 vol. 1, 1895, p. 487 (Mindoro).

Tetragonopterus (Tetragonopterus) miliaris
Bleeker, Atlas Ichth. Ind. Néerl., vol. 9,
 1877, p. 39, plate (15) 377, fig. 3 (Sumatra,
 Java, Celebes, Sangi, Ternate, Buru,
 Amboina, Ceram, New Guinea).

Chaetodon (Tetragonopterus) miliaris
Sauvage, Hist. Nat. Madagascar, Poiss.,
 1891, p. 259.

Chaetodon bellulus Thollière, Faun.
 Woodlark, 1857, p. 165. Woodlark Island.

Chaetodon mantelliger Jenkins, Bull. U.S.
 Fish Comm., vol. 19, 1899 (1901), p. 394, fig. 1.
Amoluh.

Caelorinchus acanthiger Barnard

Coelorhynchus acanthiger Barnard, Ann.
Mag. Nat. Hist., ser. 9, vol. 15, p. 502,
1925 (type locality: off Cape Point in
460 fathoms);

Ann. South Afric. Mus., vol. 21, pt. 1, p.
345, June 1925 (~~off Cape Point, 460 fathoms~~
copied).

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Coelorhynchus acantholepis Gilbert and Hubbs

Coelorhynchus acantholepis Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p. ⁽⁴²⁹⁾488,
fig. 17 (view above), fig. 18, 1920 (type
locality: Vicinity of Sibuko Bay,
Borneo, 347 to 415 fathoms). — Weber

and Beaufort, Fishes Indo Austral. Archip.,
vol. 5, p. 48, 1929 (Weber's materials).

Coelorhynchus platyrhynchus form alpha
Smith and Radcliffe ~~Radcliffe~~, Proc.
U. S. Nat. Mus., vol. 43, p. 134, fig. 9, 1912
(Albatross Station 5586, 347 fathoms;
Albatross Station 5587, 415 fathoms [not
Albatross Station 5111]).

Coelorhynchus japonicus (not Schlegel) Weber
and Beaufort, Siboga Exped., vol. 57, Fische,
p. 163, 1913 (Flores Sea, 521-694 meters;
Macassar Strait, 724 meters; Arafura Sea,
304 meters; Kei Islands, 560 meters; Bali
Strait, 538 meters).

Depth $6\frac{1}{2}$; head 4, width $2\frac{1}{8}$.

Snout to eye $2\frac{1}{3}$ in head; eye 6, $2\frac{4}{5}$ in snout, $1\frac{7}{8}$ in interorbital; orbit 5, 2 in snout, $1\frac{1}{2}$ in interorbital; maxillary reaches about opposite hind eye edge, length from front end $3\frac{1}{2}$ in head; mandibular barbel $2\frac{1}{3}$ in orbit; teeth in villiform bands, uniform, 5 or 6 irregular transverse series; interorbital $3\frac{4}{5}$ in head, low, transversely depressed anteriorly. Gill rakers 10 + 5, low ^{on second arch} spinescent tubercles, $\frac{1}{4}$ of gill filaments, which $1\frac{7}{8}$ in eye.

Scales about 74 in lateral line to pseudocaudal; 5 above, 10? below, 10 predorsal forward to occiput and 23 more still forward to snout tip. Scales with 4 to 7 apical parallel keels with spinules, last of which extending beyond

scale edge; circuli rather fine, more or less complete.

D. II, 9 — 64, second simple ray entire, $1\frac{7}{8}$ in head; interdorsal space 4; A. 66, fin height $5\frac{2}{3}$; pseudocaudal distinct (broken), rather large; pectoral rays 17 or 18, fin $1\frac{9}{10}$ in head; ventral ^{rays} I, 6, fin $2\frac{3}{4}$.

Dark brown, more or less uniform. Iris pale or with grayish. Inside mouth brownish. Inside gill opening blackish. Fins more or less darker than body.

laterally, 2 pairs of canines
anteriorly in jaws, often each
double and directed more or less
anteriorly, also mandible with
median lateral recurved canine
each side; tongue and palate
toothless; interorbital $3\frac{1}{5}$ to $3\frac{2}{3}$,
broadly convex; preopercle edge
finely denticulate; opercle with 2
spines. Gill rakers $9+22$, lanceolate,
greatly longer than gill filaments
or $1\frac{1}{4}$ in eye.

Scales 43 to $46 + 2$ to 4 in lateral
line, 5 above, 12 below, 28 to 30
predorsal; 10 rows down across
cheek to preopercle angle, of which
last 3 on preopercle flange; 2 or 3

U. S. N. M. No. 78222. Sipadan Island
(W.) S. 12° E., 3.8 miles (lat. $4^{\circ}10'35''$
N., long. $118^{\circ}37'12''$ E.), Sibuko Bay,
Borneo, in 415 fathoms. Albatross
Collection ~~Albatross~~ (D. 5587). Length 332 mm to
end of broken pseudocaudal. Type.

transverse row of scales on maxillary expansion. Scales with 8 to 13 basal radiating striae, 27 to 77 apical denticles and circuli fine. Dorsal X , 14, I or 15, I, fifth spine $2\frac{3}{5}$ to $2\frac{4}{5}$ in total head length, tenth ray $3\frac{1}{8}$ to $3\frac{2}{5}$ in combined head and body to caudal base; A. III , 7, third spine $2\frac{7}{8}$ to 3 in total head length, third ray $1\frac{1}{10}$ to $2\frac{1}{5}$; caudal deeply forked, pointed lobes ending in filaments, $1\frac{4}{5}$ to 3 in combined head and body to caudal base; pectoral $3\frac{1}{4}$ to $3\frac{3}{5}$; ventral $2\frac{2}{3}$ to $4\frac{3}{4}$, first ray ending in long filamentous point with age; in young pectoral longer than ventral.

Caelorinchus acutirostris Smith and Radcliffe

Coelorhynchus acutirostris Smith and Radcliffe

Proc. U. S. Nat. Mus., vol. 43, p. 134, pl. 30, ^{text fig. 10,} fig. 2, 1912 (type locality: Between Cebu and Bohol, in 159 fathoms). —

Gilbert and Hubbs, Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 1512, 1920 (between Cebu and Bohol; vicinity ⁽⁴³¹⁾ northern Mindanao; 150 to 175 fathoms).

(Proc. U. S. Nat. Mus., vol. 51, (1916, p. 145) (reference);

Depth $6\frac{4}{5}$; head $3\frac{1}{5}$, width $2\frac{2}{5}$. Snout to eye $1\frac{9}{10}$ in head, ending in sharp slender point; eye $6\frac{1}{8}$, $3\frac{1}{8}$ in snout, $1\frac{1}{4}$ in interorbital; orbit $4\frac{1}{2}$ in head, $2\frac{1}{5}$ in snout, equals interorbital; maxillary reaches $3\frac{4}{5}$ in eye, length from front end $4\frac{4}{5}$ in head; mandibular barbel 3 in eye; teeth finely villiform bands in 5 or 6 transverse irregular rows;

interorbital $4\frac{3}{4}$ in head, low and level forward. Gill rakers $0 + 5$ short low spiniferous ^{on second arch} tubercles, $\frac{1}{4}$ of gill filaments, which $\frac{1}{2}$ of eye.

Scales 84 in lateral line (to end of broken tail); 7 above, 13 below, $1\frac{1}{2}$ predorsal forward to occiput, which slightly before upper hind vertical end of preopercle. Scales with 5 to 7 radiating spiniferous ridges, last spinules project beyond scale edge; circuli moderate, complete.

D. II, 8 — 75, second simple ray entire, slender, $2\frac{3}{4}$ in head; interdorsal space 7; A. 70, fin

In alcohol head and body brown,
below pale to whitish. Fins all pale,
middle of each caudal lobe in some
examples with narrow white edges.
Iris gray to whitish.

East Indies and Philippines.

Changes with age are considerable.
The young without the rostral
process and the fins without
prolonged filaments, though the hind
orbital edge has a distinct row of
papillae.

Originally described as "close to
Cassio but is markedly differentiated
from it" thus the inference is that
Here considered it a lutjanid? The
original specimens consisted of a type

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height $5\frac{2}{3}$ in head; pectoral rays I, 14, fin $3\frac{1}{4}$ in head; ventral rays I, 6, fin $3\frac{2}{5}$ in head.

Back brown, sides and below paler to whitish with slightly silvery wash. Snout pale. Under surface of head whitish. Belly grayish. Iris gray. Inside mouth dusky. Inside gill openings blackish. Fins mostly pale brownish, ventrals dusted dark or dusky.

6280. Candaroman Island, north
Balabac Strait. January 4, 1909. Length
76 mm.

22155. Canmahala Bay. March
11, 1909. Length 76 mm.

1 example. Caracaran, Butan Island.
June 8, 1909. Length 49 mm.

3 examples. Cataingan Bay, Masbate.
April 17, 1908. Length 40 to 78 mm.

~~3 examples~~

4 examples. Cataingan Bay.
April 18, 1908. Length 60 to 75 mm.

~~4~~ [551.]

22841. Isabela, Basilan Island.
September 11, 1909. Length 37 to 70 mm.
6 examples.

1 example. Morongas Island.
February 10, 1908. Length 31 mm. In
coral heads.

U.S.N. No. 72947. Lavis Point Light,
N. 16° E., 5.6 miles (lat. 10° 8' 50" N.,
123° 52' 30" E.), between Cebu and
Bohol, in 159 fathoms. Albatross
Collection (D. 5418). Length 205 mm
to end of broken tail. Type.

A 956. Adaa Island, Gulf of Boni,
Celebes. November 17, 1909. Length 290 mm.

17917, 18490, 18491. Tanabeke Island,
Flores Sea. December 21, 1909. Length 120
to 127 mm.

30666 U.S.N.M. New Guinea. Australian
Museum. Length 98 to 117 mm. 2 examples.
As Delantoneites erythrogaster.

56933 U.S.N.M. Zamboanga, Bureau
of Fisheries (4043). Length 243 mm.

56069 U.S.N.M. Bacon. Bureau of
Fisheries (3626). Length 168 mm.

56268 U.S.N.M. Bacon. Bureau of
Fisheries (3624). Length 16 mm.

58036 U.S.N.M. Zamboanga. Dr. E.A.
Mearns 1906. Length 330 mm. As Caesio
erythrogaster.

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Caelorinchus affinis (Vaillant)

Macrurus affinis Vaillant, Expéd. Sci.

Travellier et Talisman, Poiss., p. 51¹⁸⁸⁸ (type locality: South of Lizores, in 1442 meters).

Macrurus japonicus (not Schlegel) Vaillant, Expéd. Sci. Travellier et Talisman, Poiss., p. 254, pl. 21, figs. 1a-f, 1888 (Hondan coasts, Banc d'Arguin, Cape Verde Islands, Lizores, 460 to 220 meters).

Macrurus talismani Collett,

Brauer, Deutsche Tiefsee Exped. Valdivia, vol. 15, p. 388, 1906 (reference). —

macrurus (Coelorhynchus) talismani Murray and Hjort, Depths of the Ocean, p. 397, 1912 (Farøe Shetland Channel, off southern England, Gibraltar, Canaries, 504 to 883 fathoms).

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Coelorinchus affinis (Vaillant)

Macrurus affinis Vaillant, Expéd. Sci.

Travellier et Talisman, Poiss., p. 51, ¹⁸⁸⁸ (type locality: South of Lizores, in 1442 meters).

Macrurus japonicus (not Schlegel) Vaillant, Expéd. Sci. Travellier et Talisman, Poiss., p. 254, pl. 21, figs. 1a-f, 1888 (Yondan coasts, Banc d'Arguin, Cape Verde Islands, Lizores, 460 to 220 meters).

Macrurus talismani Collett,

— Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference).

Macrurus (Coelorhynchus) talismani Murray and Hjort, Depths of the Ocean, p. 397, 1912 (Faroe Shetland Channel, off southern England, Gibraltar, Canaries, 504 to 883 fathoms).

indorf
Hjort

Löderleinia berycoides (Hilgendorf)

Anthias berycoides, Hilgendorf. Hita. Be

Coelorhynchus vaillanti Roule, Bull. Inst.
Océanogr. Monaco, no. 320, p. 20, May 20, 1916
(type locality: Azores, 1187 meters);

Rés. Camp. Sci. Monaco, vol. 52, p. 81, pl.
3, figs. 3a-c, 1919 (6 miles south of São
Miguel, 1187 meters; north of São
Jorge, $3\frac{1}{2}$ miles, 1095 meters).

Caecorhynchus anatrostris Jordan and Starks
Coelorrhynchus anatrostris (Jordan and Gilbert)

Jordan and Starks, Bull. U.S. Fish Comm.,
 vol. 22, p. 619, fig., 1902 (Aug. 1904).
 (type locality: Misaki, Sagami). —

Jordan, Tanaka, Snyder, Journ. College
 Sci. Tokyo, vol. 33, pt. 1, p. 418, fig. 388
 (copied), 1913. — Gilbert and Hubbs, Proc.
 U.S. Nat. Mus., vol. 51, p. 145, 1917 (reference);
 Bull. U.S. Nat. Mus., no. 100, vol. 1, p. 431, 1920 (diagnosis in key).
Coelorrhynchus antrostris Franz, Abhandl.
 Kon. Bayer. Akad. Wiss., vol. 4, Suppl.
 Band, vol. 1, p. 27, 1910 (Aburatsubo).

Depth $7\frac{2}{3}$; head $4\frac{1}{5}$, width $2\frac{1}{8}$.
Snout to eye $2\frac{1}{4}$ in head; eye $5\frac{1}{4}$,
 $2\frac{1}{4}$ in snout, $1\frac{1}{4}$ in interorbital; orbit
4 in head, $1\frac{3}{5}$ in snout, very
slightly more than interorbital;
maxillary reaches $\frac{3}{4}$ in eye, length
from front end 4 in head; mandibular
barbel $2\frac{1}{4}$ in eye; teeth uniform,
villiform, in bands in jaws of 8 or 9
irregular ~~transverse~~ rows transversely;
interorbital $4\frac{1}{4}$ in head, low,
depressed forward until nearly level.
Gill rakers 0 + 7 low short spinescent
tubercles on second arch, $\frac{1}{4}$ gill
filaments, which $\frac{1}{2}$ of eye.

Scales about 110 in lateral line
to pseudocaudal; 6 ^{above} ~~about~~, 12 below,
9 predorsal forward to occiput and
25? more forward to snout tip.
Scales with 6 to 9 radiating apical

242, 7694. Ulugan Bay, Palawan.
December 29, 1908. Length 130 to 325
mm.

9153, 19040. Varadero Bay, Mindoro.
July 23, 1908. Length 173 to 183 mm.

5798. Zamboanga market. May 26,
1908. Length 268 mm.

A 675. Sitaniki Reef, Borneo. September
24, 1909. Length 301 mm.

19893, 19894. Daisy Island, west of
Bumbum Island, Borneo. January 6, 1910.
Length 84 to 93 mm.

A 688. Sir Iruil Island, Borneo.
September 25, 1909. Length 303 mm.

A 1325. Tifu Bay, Bouro Island.
December 10, 1909. Length 304 mm.

A 1258. Uhai, Bouro Island. December 9, 1909. Length 293 mm.

A 948. Lodepo and Taseyogo Islands, Celebes.
November 16, 1909. Length 298 mm.

A 898. Limbe Strait, Celebes. November 10,
1909. Length 250 mm.

spinuliferous ridges, median usually largest and extend beyond scale edge; circuli moderate, complete.

D. II, 9 - 104, second simple ray slender, entire, length $1\frac{7}{8}$ in head; interdorsal space $3\frac{1}{2}$; A. 110, fin height $4\frac{1}{3}$; pectoral rays I, 16, fin $2\frac{1}{4}$ in head; ventral rays I, 6, fin $3\frac{1}{5}$.

Brown above, paler to whitish on under surfaces of head and abdomen. Iris pale brassy to whitish. Inside mouth brown. Inside gill opening blackish brown. Fins brownish, with more or less dusky to blackish brown.

2 examples. Danawan and Si Simil
Islands, Borneo. September 27, 1909.
Length 71 to 72 mm.

15 examples. Great Tobea Island.
December 15, 1909. Length 33 to 64 mm.
~~Several~~ Several with upper, lower
and hind borders of caudal whitish,
in others only upper and lower
borders broadly whitish.

14865. Dodepo and Pusejogo Islands,
Gulf of Tomini, Celebes. November 16,
1909. Length 66 mm.

24137. Timahu Island, Bouru.
December 13, 1909. Length 65 mm.

1 example [440]. no locality.
Length 61 mm.

Japan. Gilbert says "Type, 40 cm. long, from Misaki, No. 8550, L.S. Jr. V." At the end of his description he says "Only one specimen seen, it was taken on long lines at Misaki by Kuma Aoki and presented to us by Professor Mitsuokuri."

U.S.N.M. No. 51471. Misaki, Sagami, Japan.

Length 387 mm. Type.

2 examples. Alibijaban Island, Ragay Gulf, Luzon. March 6, 1909. Length 28 to 51 mm.

16644. Baganza Bay, Mindanao. May 13, 1908. Length 62 mm.

22728. Biri Channel, Luzon. June 1, 1909. Length 61 to 66 mm. 2 examples.

1 example. Biri Channel. June 2, 1909. Length 66 mm.

6110. Bolinao Bay, Luzon. May 10, 1909. Length 38 mm.

22778. Busin Harbor, Burias Island. April 23, 1908. Length 61 mm.

15304. Busin Harbor. March 8, 1909. Length 61 mm.

16831. Butuanan Island. June 12, 1909. Length 67 mm.

1 example. Caldingan Bay, Masbate. Length 68 mm. [552.]

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Coelorhynchus aratum Gilbert

Coelorhynchus aratum Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 674, fig. 264, 1903 (1905) (type locality: off south coast Oahu, 311 to 337 fathoms; also off Oahu and Pailolo Channel, 289 to 337 fathoms). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, pt. 7, p. 432, 1920 (diagnosis in key). —

Fowler, Mem. Bishop Mus., vol. 10, p. 86, 1928 (type; Hawaii).

Macrurus (Coelorhynchus) aratum Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 388, 1906 (reference).

Coelorhynchus parallelus (not Günther) Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, p. 421, 1897 (Hawaiian Islands, 313 fathoms).

Depth $6\frac{1}{3}$ to 7; head $3\frac{1}{5}$ to $3\frac{1}{3}$, width $1\frac{7}{8}$ to $2\frac{1}{5}$. Snout to eye $2\frac{1}{10}$ to $2\frac{1}{6}$ in head; eye $4\frac{1}{2}$ to $4\frac{3}{5}$, $2\frac{1}{8}$ in snout, 1 to $1\frac{1}{8}$ in interorbital; orbit $3\frac{2}{3}$ to 4 in head, $1\frac{3}{5}$ to $1\frac{7}{8}$ in snout, $1\frac{1}{8}$ to $1\frac{1}{6}$ times interorbital; maxillary reaches $\frac{3}{5}$ to $\frac{2}{3}$ in eye, length from front end $4\frac{1}{5}$ to $4\frac{4}{5}$ in head; teeth in villiform bands in jaws, of 7 or 8 irregular series transversely; interorbital 4 to $4\frac{4}{5}$, low to broadly convex forward. Gill rakers 0+6, low spinescent tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $\frac{1}{2}$ of eye.

Scales 75 in lateral line to pseudocaudal; 6 above, 14 below, 8 predorsal forward to occiput which

Microbrachthys waiteri new species (989)

Depth $3\frac{1}{4}$ to $3\frac{1}{2}$; head $3\frac{2}{5}$ to $3\frac{3}{5}$,
width $1\frac{7}{8}$ to $2\frac{1}{10}$. Snout $4\frac{3}{5}$ to 5
in head from snout tip; eye $3\frac{2}{5}$ to
 $4\frac{1}{10}$, greater than snout, 1 to $1\frac{1}{8}$ in
interorbital and hind orbital edge
with row of low small papillae;
maxillary reaches $\frac{3}{4}$ to $\frac{4}{5}$ in eye,
expansion $1\frac{1}{2}$ to $1\frac{2}{3}$ in eye diameter,
length 2 to $2\frac{1}{5}$ in head from snout
tip; teeth uniserial in jaws, pair of
wide set canines above often double
and pair of lower front canines
recurved outward, also 2 recurved
canines medially on each mandibular
ramus; palate and tongue denticulous;
interorbital $3\frac{2}{5}$ to $3\frac{4}{5}$, convex;
preopercle edge denticulate; one large

at first $\frac{2}{5}$ between hind eye edge and first dorsal origin. Scales with 3 to 5 nearly parallel rows of strong spines, last of which extend behind hind scale edge; circuli fine, not extended apically.

D. II, 8 — 61, second simple ray slender, entire, first branched ray $2\frac{1}{3}$ in head; interdorsal space 7 to $8\frac{1}{2}$; A. 68, fin height $4\frac{7}{8}$; pectoral rays I, 17, fin $2\frac{1}{3}$ to $2\frac{3}{4}$ in head; ventral rays I, 6, fin $2\frac{3}{4}$ to 3.

Back brown, little paler below, under surface of head much lighter or paler. Branchiostegal region and opercles tinged with gray or dark

spine on opercle, other not distinct.
Gill rakers $10 + 17$, finely lanceolate,
much longer than gill filaments
or $1\frac{1}{4}$ in eye.

Scales 45 to $49 + 1$ or 2 in lateral
line, 5 above, 12 below, 28 to 32
predorsal; 11 scales transversely over
cheek from eye to preopercle angle,
of which last 4 on preopercle flange;
 4 scales transversely across maxillary
expansion; few small scales along
body at bases of soft dorsal and
anal; caudal finely scaled over
most its extent; few small basal
scales on paired fins. Scales with
 11 to 13 basal radiating striae,
apical denticles 46 to 54 and circuli

1492

brown. Iris pale. Inside mouth
gray. Inside gill opening blackish.
Fins all brownish, first dorsal
blackish.

U.S.N.M. No. 47701. Lat. $21^{\circ}15'N.$, long.
 $157^{\circ}30'$.

December 6, 1891.

Albatross Collection (D. 3473).

Length 122 mm.

U.S.N.M. No. 51656.

Albatross Collection.

Length 320 mm. Type.

moderate. Dorsal IX or X, 16, I,
 third spine $1\frac{4}{5}$ to 2 in total
 head length, ninth ray 2 to $2\frac{1}{8}$;
 A. III, 7, I, third spine $3\frac{2}{3}$ to $3\frac{3}{4}$,
 third ray $1\frac{7}{8}$ to 2; caudal $2\frac{4}{5}$ to $3\frac{1}{3}$
 in combined head and body to caudal
 base, deeply forked and slender
 lobes slightly pointed; pectoral $3\frac{1}{3}$
 to $3\frac{1}{2}$; ventral $1\frac{1}{3}$ to $1\frac{2}{5}$ in head;
 least depth of caudal peduncle $2\frac{1}{5}$
 to $2\frac{1}{3}$.

In alcohol brown above, pale to
 whitish below. Each scale on back
 with obscure darker brown spot.
 Lower surface with silvery tint.
 Iris gray to whitish. Fins all pale.

1493

Coelorhynchus argentatus Smith and Radcliffe

Coelorhynchus argentatus Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 137, pl. 31, fig. 1, 1912 (type locality: Jolo, Philippines). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 433, 1920 (off southern Luzon; north of Mindanao; Gulf of Davao; Jolo; between Jolo and Tawi Tawi; 100 to 318 fathoms). — Barnard, Ann. South Afric.

Mus., vol. 21, pt. 1, p. 339, June 1925 (east of Algoa Bay, 47 fathoms). — Weber

and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 40, fig. 9 (head), 1929 (near Kei Islands).

Coelorhynchus acus Weber, Siboga Exped., vol. 57, Fische, p. 160, pt. 1, figs. 4 & 4a, 1913 (type locality: lat. $5^{\circ}40'S$, long. $132^{\circ}26'E$, 310 meters, Kei Islands; lat. $5^{\circ}26'16''S$, long. $132^{\circ}32.5'$, 397 meters).

Depth $6\frac{1}{2}$; head 4, width $2\frac{1}{4}$.

Snout to eye $2\frac{3}{5}$ in head; eye $5\frac{2}{5}$, $2\frac{1}{5}$ in snout, $1\frac{1}{2}$ in interorbital; orbit $4\frac{3}{5}$ in head, $1\frac{3}{5}$ in snout, $1\frac{1}{10}$ in interorbital; maxillary reaches opposite hind edge of orbit, length from front end $2\frac{3}{4}$ in head; mandibular barbel $1\frac{3}{4}$ in eye; teeth in villiform bands in jaws, in 5 or 6 irregular transverse series; interorbital 4 in head, low, broadly convex. Gill rakers 0+8 on second arch, low spinescent tubercles $\frac{1}{3}$ of gill filaments, which $1\frac{4}{5}$ in eye.

Scales 128? (pockets) in lateral axial series; 7 above, 13 below, 12 forward to occiput. Scales with 12

Depth $2\frac{7}{8}$ to $3\frac{1}{4}$; head 3 to $3\frac{1}{3}$, width $2\frac{1}{10}$ to $2\frac{1}{8}$. Snout $3\frac{2}{5}$ to 5 in head, with age a pointed, flexible, conic papilla like point extending beyond premaxillary for space half of eye diameter; eye $3\frac{1}{2}$ to $4\frac{1}{3}$, its edge along posterior half of orbit with single row of small fleshy points or papillae, much greater than snout in young to $1\frac{1}{3}$ with age, 1 to $1\frac{1}{3}$ in interorbital; maxillary reaches opposite hind pupil edge in young till opposite or little behind hind eye edge with age, expansion $1\frac{2}{5}$ to 2 in eye, length $1\frac{3}{4}$ to 2 (with age includes rostral papilla) in head; bands of fine teeth in each jaw - anteriorly, narrowing

to 14 irregular series of minute denticles; circuli rather coarse, complete.

D. II, 9-100, second simple ray entire, slender, $2\frac{2}{3}$ in head; interdorsal space $3\frac{1}{5}$; A. 100, fin height $4\frac{7}{8}$; pseudocaudal minute; pectoral rays I, 13, fin $2\frac{7}{5}$ in head; ventral rays I, 6, fin $3\frac{4}{5}$.

Brownish, most of head and body laterally with silvery white tints. Iris brassy. Fins all more or less brownish, first dorsal dusky. Inside of mouth and gill opening pale. Chin, chest and breast tinted with dark neutral gray.

Microbrachthys tuka Herre.

Microbrachthys tuka Herre, Philippine
Journ. Sci., vol. 32, no. 3, (March)
1927, p. 413, pl. 1. Maricaban
Island.

South Africa, Philippines, Kei Islands. The scales are variable as some have converging or radiating rows of apical spinules, again they appear in parallel rows or may even be without any regularity in arrangement. Characteristic is the cavernous or transparent to swollen appearance of the head, the inconspicuous ridges above, the finely roughened or only rough velvety feel of the scales and the silvery coloration, with a dark gray or slate area on the belly.

U. S. N. M. No. 72949. Jolo Light, E. 24.75 miles (lat. $6^{\circ} 03' 15''$ N., long. $120^{\circ} 35' 30''$ E.), vicinity of Jolo, in 318 fathoms. March 5, 1908. Albatross Collection (P. 5172). Length 365 mm.

27617 to 27619, N. H. S. P. Padang,
Sumatra. Length 210 to 237 mm.
A. C. ~~Thomson~~ and H. L. ~~Miller~~. ↓

When fresh in arrack rich olivaceous
brown above, sides and lower surfaces
deep rosy. Narrow lines, deep rosy
below, but turning dark brown above,
extend in courses of scales obliquely
to dorsal base. Iris dull orange.
Dorsals mostly olivaceous, edge broadly
dusky gray, deepest or almost pure
black along edges. Caudal base yellowish
becoming grayish and dusky, then
deepens into blackish along edges.
Anal and ventral deep citrine yellow.
Pectoral bright orange, axil pale.

Caelorhynchus argus Weber

Caelorhynchus argus Weber, Siboga Exped., vol. 57, Fische, p. 161, pl. 4, figs. 4-4a, 1913 (type locality: Flores Sea, 521 meters; Macassar Straits, 450 meters; Molucca Passage, 397 meters; Bali Sea, 538 meters). — Gilbert and

Hubbs, Bull. U.S. Nat. Mus., no. 100, vol. 1, p. 472, 1920 (between Burias and Luzon; off southern Luzon; between Panay and Guimoras Islands; Gulf of Davao; near Jolo Islands; 135 to 232 fathoms). — Weber and Beaufort,

Fishes Indo Austral. Archip., vol. 5, p. 46, fig. 10, 1929 (Bali Sea; Weber's materials).

1498
Coelorhynchus aspercephalus Waite

Coelorhynchus aspercephalus Waite,
Records Canterbury Mus., vol. 1, no. 3, p. 178,
pl. 29, fig. 2, text fig. 2 (scale) (type
locality: New Zealand); vol. 1, no. 4, p. 318,
Dec. 28, 1912 (reference). — Gilbert and

Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 144,
1916 (reference); Bull. U. S. Nat. Mus.,
no. 100, vol. 1, p. 426, 1920 (diagnosis in
key).

1499

Coelorhynchus australis (Richardson)

Lepidoleprus australis Richardson, Proc. Zool. Soc. London, vol. 7, 1839, p. 100 (type locality: Port Arthur, Tasmania).

macrurus australis Günther, Cat. Fish. Brit. Mus., vol. 4, p. 391, 1862 (type).

Coelorhynchus australis Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 120, 1901 (Port Arthur; Japan). — Waite, Records Canterbury Mus., vol. 1, no. 1, April 25, 1907 (reference). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 144, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 426, 1920 (diagnosis in key).

Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397, 1899 (reference).

{ Macrurus (Coelorhynchus) australis Brauer, Deutsche Tiefsee Exped. Valdivia, vol. 15, p. 388, 1906 (reference).

1500
Coelorrhinchus australis McCulloch,
Austral. Mus. Mem., no. 5, pt. 2, p.
127, June 29, 1929 (reference).

Coelorhynchus braueri Barnard ¹⁵⁰¹
(Oxygadus)

Coelorhynchus braueri Barnard, Ann.
Mag. Nat. Hist., ser. 9, vol. 15,
p. 501, 1925 (type locality:)

~~Coelorhynchus (Oxygadus) braueri Barnard~~
Ann. South Afric. Mus., vol. 21, pt. 1,
p. 342, pl. 13, fig. 5, June 1925 (west
coast Saldanha Bay; and Table Bay,
off Cape Point and East London, 250 to
450 fathoms); (same localities).

Macrurus parallelus (not Günther)
Gilchrist, Marine Investig. South Africa,
vol. 3, p. 137, 1904 (egg: off Cape Point).

Macrurus (Coelorhynchus) parallelus
Brauer, Deutsche Tiefsee Exped. Valdivia,
vol. 15, p. 257, 1906 (off south west
Africa, 981 meters).

1582

Caelorhynchus canus (Garman)

Macrurus canus Garman, Mem. Mus. Comp. Zool., vol. 24, p. 217, pl. 49, fig. 2, pl. 44, figs. 1 and 2 (lateral system) (type locality: lat. $7^{\circ}12'20''N$, long. $80^{\circ}55'$, in 182 fathoms; Gulf of Panama, 153 to 210 fathoms).

Macrurus (Coelorhynchus) canus Brauer, Deutsche Tiefsee Exped. Valdivia, vol. 15, p. 388, 1906 (reference).

Macrourus canus Jordan, Evermann, Clark, Rep. U. S. Comm. Fisher., 1930, pt. 2, p. 206 (reference).

Coelorhynchus canus Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397 (reference). —

Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 144, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 426, (diagnosis in key).
1920

1583

Depth $5\frac{3}{4}$; head $3\frac{1}{4}$, width $2\frac{2}{5}$.
Snout $3\frac{1}{8}$ in head; eye 4, $1\frac{1}{4}$ in
snout, 1 in interorbital; preoral
profile concave, length $3\frac{1}{2}$ in head;
maxillary reaches nearly opposite
hind eye edge, length from front end
 $3\frac{2}{3}$ in head; mandibular barbel
 $3\frac{1}{2}$ in eye; teeth in villiform bands,
fine, 4 or 5 irregularly in transverse
count; interorbital 4, low or very
slightly convex. Gill rakers 1+9 short
spinescent tubercles, ^{on second arch,} $\frac{1}{5}$ of gill filaments,
which $\frac{1}{2}$ of eye.

Scales (pockets) 80 in lateral line to pseudocaudal; 7 above, 15 below, 16 predorsal forward till opposite hind eye edge. Scales with 4 rows of rather large spinules, first spine only extended little behind scale edge; circuli coarse, complete.

D. II, 10 - 71, second simple ray slender, entire, length $1\frac{7}{8}$ in head; interdorsal space $3\frac{1}{2}$; A. 75, fin height $5\frac{1}{2}$; pectoral rays I, 19, fin $2\frac{1}{4}$ in head; ventral rays I, 6, fin $2\frac{3}{5}$.

Brown, with brassy and silvery tints on side of head and body, especially forward. Head rather fuller than body. Iris pale, gray above. Inside mouth pale. Lower surface of mandible, breast, chest and belly dark neutral gray. Inside gill

opening blackish brown, pale well ¹⁵⁰⁵
inside. Fins brownish.

Gulf of Panama.

U. S. N. M., No. 57863. Lat. $7^{\circ}16'45''$ N.,
long. $79^{\circ}56'30''$ W., Gulf of Panama,
in 210 fathoms.

Albatross Collection (D. 3389).

Length 160 mm.

1506

Caelorhynchus carminatus (Goode)

Macrurus carminatus Goode, Proc. U.S. Nat. Mus., vol. 3, pp. 337, 346, 475, 1880 (type locality: lat. $40^{\circ}2'54''$ N., long. $70^{\circ}23'40''$, Gulf Stream, in 115 fathoms), p. 475 (type). — J. H. Bean, Amer.

Journ. Sci. Art., ser. 3, vol. 22, p. 296, 1881 (lat. $39^{\circ}57'$ N., long. $70^{\circ}31'30''$, 225 fathoms; lat. $39^{\circ}55'$ N., long. $70^{\circ}28'$, 396 fathoms). — Goode and Bean,

Bull. Mus. Comp. Zool., vol. 10, no. 5, 1883, p. 196 (lat. 32° to 33° N., long. 76° to 77° W., in 233 to 464 fathoms).

— Jordan and Gilbert, Bull. U.S. Nat. Mus., no. 16, p. 812, 1883 (copied). — Miner, Rep.

U.S. Fish Comm., pt. 11, p. 184, 1883 (1885) (lat. $39^{\circ}58'50''$ N., long. $70^{\circ}39'40''$, 168 fathoms; lat. $39^{\circ}58'35''$ N., long. $71^{\circ}30'$, 197 fathoms).

— (Parker) Benedict, Rep. U.S. Fish Comm., pt. 12, p. 100, 1884 (1886) (lat. $39^{\circ}57'45''$ N.,

long. $70^{\circ}56'30''$ W., 195 fathoms). — ¹⁵⁰⁷

Günther, Rep. Voy. Challenger, vol. 22, p. 129, pl. 5, fig. 13, 1887 (near Bahamas).

Coelorhynchus carminatus Goode and Bean, Oceanic Ichth., p. 398, fig. 336, 1895 (Gulf Stream, West Indies, Gulf of Mexico, 49 to 616 fathoms). — Jordan

and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 3, p. 2588, 1898 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397, 1899 (reference). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 144, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 426, 1920 (diagnosis in key).

(Macrurus (Coelorhynchus) carminatus Brauer, Deutsche Tiefsee Exped. Valdivia, vol. 15, p. 388, 1906 (reference).

1508

Depth $6\frac{1}{8}$ to $6\frac{2}{3}$; head 4 to $4\frac{3}{5}$,
width $1\frac{3}{4}$ to $2\frac{1}{4}$. Snout to eye
 $2\frac{3}{5}$ to $2\frac{4}{5}$ in head; eye $4\frac{1}{8}$ to $4\frac{1}{2}$,
 $1\frac{1}{2}$ to $1\frac{3}{4}$ in snout, 1 in interorbital
to $1\frac{1}{8}$ times interorbital; orbit $3\frac{1}{5}$
to $3\frac{2}{5}$ in head, $1\frac{1}{8}$ to $1\frac{1}{3}$ in snout,

$1\frac{1}{4}$ times interorbital; maxillary
reaches $\frac{2}{5}$ to $\frac{3}{4}$ in eye, length
from front end $3\frac{1}{3}$ to $3\frac{1}{2}$ in head;
mandibular barbel $3\frac{1}{2}$ to $3\frac{3}{4}$ in
eye; teeth in villiform bands in
jaws, in 4 to 6 irregular rows;
interorbital $4\frac{1}{5}$ to $4\frac{1}{3}$, low
anteriorly and with slight convexity.
Gill rakers 0+8, short low points,
 $\frac{1}{3}$ of gill filaments, which $2\frac{1}{2}$ in
eye.

Scales 100 to 110 in lateral line;
6 or 7 above, 13 below, 8 predorsal
forward to occiput, which at first

6917. Tacloban market. July 25, 1909. (975)
Length 148 mm.

6694. Hong Kong market, China. August
13, 1908. Length 265 mm.

A 1020. Buha Buha Island, Gulf of
Tonnini, Celebes. November 20, 1909. Length
128 mm.

55987 U.S.N.M. Buluan, Philippines.
Bureau of Fisheries (4038). Length
305? mm. As Caesioprinjalo.

56281 U.S.N.M. Cavite. Dr. G.A. Ling.
Length 72 to 130 mm. 4 examples. As
Prinjalo prinjalo.

1507

third between hind eye edge and first dorsal origin. Scales with 10 to 12 parallel apical series of spinules, last of which extend little behind hind scale edge; cirruli moderate, complete.

D. II, 9 - 80 to 90, second simple ray entire, slender, first branched ray $1\frac{2}{3}$ to $1\frac{7}{8}$ in head; interdorsal space $2\frac{1}{6}$ to $2\frac{4}{5}$; A. 76 to 100, fin height 3 to 4; pectoral rays I, 12, fin $1\frac{9}{10}$ to $2\frac{1}{8}$ in head; ventral rays I, 6, fin $2\frac{1}{8}$ to $2\frac{1}{5}$.

Largely uniform brown above, lower surfaces little paler. Iris pale, evidently whitish. Inside mouth grayish. Inside gill opening dark brown. Fins all brown, ventral membranes blackish brown. Belly dark brown.

India, Singapore, East Indies,
Philippines. A well marked species
known by the oblique rows of scales
on the body.

8454. Cebu market. March 27, 1909.

Length 455 mm. No dark stripe through each scale
row.

22554. Manila market. January 13, 1908.

Length 126 mm.

6749, 6750. Manila market. April 16,
1909. Length 350 to 353 mm.

6761, 21156, 21157. Manila market.
April 21, 1909. Length 180 to 293 mm.

Dull reddish, paler below. Narrow
brownish red stripe through each
scale row, oblique above lateral
line. Ventral edges dark.

U.S.N.M., no. 31875. Lat. $39^{\circ}58'N.$, long. $70^{\circ}37'W.$

In 125 fathoms. October 4, 1882.

Albatross Collection (D. 1151).

Length 125 mm.

U.S.N.M., no. 43625. Lat. $28^{\circ}45'N.$, long. $96^{\circ}26'W.$

In fathoms. March 14, 1885.

Albatross Collection (D. 2398).

Length 237 to 240 mm. 2 examples.

U.S.N.M., no. 45694.

In fathoms. September 13, 1890.

Fish Hawk Collection (879).

Length 258 mm.

U.S.N.M., no. 45696. Lat. $36^{\circ}41'37''N.$,
long. $74^{\circ}42'15''W.$

June 4, 1885.

Albatross Collection (D. 2424).

Length 165 mm.

1511
U.S. N. M., No. 45699. Lat. $11^{\circ}43'N.$,
Long. $69^{\circ}9'30''$
In 208 fathoms. February 18, 1884.
Albatross Collection (D. 2125).
Length 183 mm.

U.S. N. M., No. 45700. Lat. $28^{\circ}36'N.$,
Long. $85^{\circ}33'30''W.$
March 14, 1885.
Albatross Collection (D. 2402).
Length 53 to 55 mm. 2 examples.

1572

Caelorhynchus caribbaeus (Goode and Bean)

Macrurus caribbaeus Goode and Bean,
Proc. U. S. Nat. Mus., vol. 8, p. 594, 1885
(type locality: lat. $29^{\circ}7'30''$ N., long. $88^{\circ}8'$ W.,
in 210 fathoms; lat. 9° to 29° N., long. 76° to
 101° W. (Atlantic Ocean)).

Macrurus (Coelorhynchus) caribbaeus Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
↓ p. 388, 1906 (reference).

→ Coelorhynchus caribbaeus Goode and Bean,
Oceanic Ichth., p. 401, pl. —, fig. 338 (type;
same materials as above). — Jordan and
— Garman, Mem. Mus. Comp. Zool., vol.
24, p. 397, 1899 (reference).
p. 2081, 1910 (reference). — — — — —

Proc. U. S. Nat. Mus., vol. 51, p. 144, 1916
(reference); Bull. U. S. Nat. Mus., no. 100, vol.
1, p. 426, 1920 (diagnosis in key).

1572

Caelorhynchus caribbaeus (Goode and Bean)

Macrurus caribbaeus Goode and Bean,
Proc. U. S. Nat. Mus., vol. 8, p. 594, 1885
(type locality: lat. $29^{\circ}7'30''$ N., long. $88^{\circ}8'$ W.,
in 210 fathoms; lat. 9° to 29° N., long. 76° to
 86° W., in 142 to 210 fathoms). — Günther,

Berlin, 1879.
Rep. Voy. Challenger, vol. 22, p. 124, 1887
(note).

Coelorhynchus caribbaeus Goode and Bean,
Oceanic Ichth., p. 401, pl. —, fig. 338 (type;
same materials as above). — Jordan and

Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 3,
p. 2589, 1898 (copied). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 144, 1916
(reference); Bull. U. S. Nat. Mus., no. 100, vol.
1, p. 426, 1920 (diagnosis in key).

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86°

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p. 25

~~Döderleinia~~ ~~berycoides~~ ~~Steindachner~~
Berlin, 1879.

Gesell. Naturfor. Freund.

78. Japan.

Döderleinia berycoides
Wien, 1883, p. 37

~~Löderlein, Berlin, 1879.~~
~~Phys. Klasse, Berlin.~~
~~Gesetz.~~

~~78. Jahr.~~
~~Löderlein in~~

~~vol. 47, pt. 1, 1883, 737~~

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p. 20

Depth 7 to $7\frac{1}{2}$; head $4\frac{1}{5}$ to $4\frac{1}{3}$, width $1\frac{4}{5}$ to 2. Snout to eye $2\frac{1}{3}$ to $2\frac{2}{5}$ in head; eye 4 to $4\frac{1}{3}$, $1\frac{4}{5}$ to $1\frac{7}{8}$ in snout, $1\frac{1}{10}$ to $1\frac{1}{5}$ times interorbital; orbit $3\frac{1}{8}$ to $3\frac{1}{3}$ in head, $1\frac{1}{8}$ to $1\frac{1}{5}$ in snout, $1\frac{1}{4}$ to $1\frac{1}{3}$ times interorbital; maxillary reaches $\frac{1}{3}$ to $\frac{1}{2}$ in eye, length to front edge $3\frac{1}{3}$ to $3\frac{1}{2}$ in head; ^{maxillary} barbel $2\frac{1}{2}$ to $2\frac{2}{3}$ in eye; teeth in villiform bands in jaws, in 4 or 5 ^{irregular series} ~~transverse series~~; interorbital $4\frac{3}{4}$ to $5\frac{1}{5}$ in head, low and nearly level forward. Gill rakers 0 + 8 low spinescent tubercles on second arch, $\frac{1}{3}$ of gill filaments, which $3\frac{1}{2}$ in eye.

Scales 124 to 126 in lateral line; 6 above, 15 or 16 below, 14 predorsal forward to occiput which about first fourth between hind eye edge

Depth $2\frac{4}{5}$; head $2\frac{3}{4}$, width 2.
 Snout 4 in head from upper jaw tip;
 eye 3, greater than snout or interorbital;
 maxillary reaches $\frac{2}{5}$ in eye, expansion
 2 in eye, length 2 in head from snout
 tip; band of fine teeth in upper jaw,
 uniserial laterally and with 4 canines in
 front; narrow band of fine teeth in lower
 jaw, with 6 front canines and 1 on each side;
 vomer with minute teeth in band of 3 or 4
 irregular rows, band on palatines more
 minute and with 4 or 5 irregular rows;
 interorbital 6, low.

Scales 35 in median lateral series to
 caudal base and 2 more on latter; upper
 section of lateral line with 36 tubular
 scales, lower section with 9 to caudal
 base and 2 more on latter; 3 scales
 above lateral line, 1 2 below, about
 9? predorsal forward opposite middle

and first dorsal origin. Scales with 11 or 12 irregular horizontal apical rows of spinules, last of which not extended beyond hind edge of scale; circuli moderate, not extended apically. Ventral fossa very large, $1\frac{1}{3}$ in eye.

D. II, 9 — 105 to 110, second simple ray slender, entire, first branched ray $1\frac{3}{5}$ to 2? in head; interdorsal space $3\frac{2}{3}$ to 4; A. 96 to 110, fin height 3? to 4; pectoral rays I, 16, fin $2\frac{1}{4}$ to $2\frac{3}{5}$; ventral rays I, 6, fin $2\frac{2}{3}$ to 3.

Brown above, sides more or less with silvered tints. Iris gray to whitish. Head all more or less paler than body. Chin and branchiostegal region blackish brown. Inside mouth pale. Inside gill opening blackish.

Pseudochromis punctatus (Richardson)

Assiculus^{punctatus} Richardson, Dissert. in Australia,
Stokes, vol. 1, 1846, p. 492, pl. 2, fig. 1.

Coast of Australia.

Pseudochromis punctatus McCulloch,

Mem. Queensland Mus., vol. 3, June 28,
1915, p. 47 (Useless Inlet, Shark Bay,
West Australia).

Pseudochromis müllersi Khenzinger, Sitzb.

Ber. Akad. Wiss. Wien, vol. 80, pt. 1, 1879,

p. 370. Port Darwin; Macleay, Proc. Linn.

Soc. New South Wales, vol. 9, 1884, p. 28

(copied). — Waite, Records Australian Mus.,
vol. 6, pt. 2, 1905, p. 62 (North Western Coast).

Cichlops filamentosus Macleay, Proc. Linn.

Soc. New South Wales, vol. 5, 1881, p. 570.

Port Darwin.

Breast and belly dusky, also dark brown tints high as pectoral base behind gill opening.

U.S.N. No. 37333. Lat. $29^{\circ} 7' 30''$ N.,
 long. $88^{\circ} 08'$.
 300 fathoms. 1886.

Albatross Collection (2377).

Length 285 mm. Type of macurus caribbaeus.

U.S.N. No. 44668. Lat. $29^{\circ} 7' 30''$ N.,
 long. $88^{\circ} 08'$.
 300 fathoms. February 11, 1885.

Albatross Collection (2377).

Length 235 to 258 mm. Four paratypes.

98
12 examples. Batan Island,
Luzon. June 5, 1909. Length 13 to 20
mm.

2 examples. Batan Island.
July 22, 1909. Length 23 to 27 mm.
51997 U.S.N.M. Luzon. Dr. B. Dean.
Length 43 mm.

U.S.N.M., No. 53048.

1516

Albatross Collection (2400).

Length 190 to 242 mm. 2 examples.

U.S.N.M., No. 74322.

Albatross Collection (2143).

Length 195 mm.

U.S.N.M., 5 examples.

Albatross Collection (2401).

Length 160 to 210 mm.

1517

Coelorhynchus carnifer Gilbert and Hubbs

Coelorhynchus carnifer Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 490,
(430) fig. 19, 1920 (type locality: Off southern
Algon, in 236 fathoms).

Coelorhynchus platyrhynchus form alpha
(part) Smith and Radcliffe, Proc. U. S.
Nat. Mus., vol. 43, p. 134, 1917 (not fig. 9)
(specimen from Albatross Station 5111
only).

Depth 7; head $3\frac{3}{4}$, width $2\frac{1}{8}$. Snout
to eye $2\frac{1}{4}$ in head; eye $4\frac{4}{5}$, $1\frac{1}{5}$ in
interorbital; orbit $3\frac{2}{3}$ in head,
 $1\frac{1}{2}$ in snout, little greater than
interorbital; maxillary reaches
opposite $\frac{3}{4}$ in eye, length from
front end $4\frac{1}{4}$ in head; mandibular
barbel $2\frac{2}{3}$ in eye; teeth villiform,
in bands in jaws of 5 or 6 irregular
rows; interorbital $4\frac{1}{2}$ in head,
low, nearly level forward. Gill rakers

0 + 8 low short knobs on second arch,
 $\frac{1}{4}$ of gill filaments, which $2\frac{1}{2}$ in
 eye.

Scales 87 in lateral line; 6
 above, 13 below, 8 predorsal forward
 to occiput and 30 more forward
 to snout tip. Scales with 7 to 10
 radiating spinuliferous apical
 beels, last spinules extending
 beyond scale edge; circuli
 moderate, fine complete.

D. II, 7 - 70?, second simple ray
 slender, entire, 2 in head;
 interdorsal space $2\frac{1}{4}$; A. 79, fin
 height $3\frac{7}{8}$; pectoral ^{rays} I, 15, fin $2\frac{1}{10}$
 in head; ventral rays I, 6, fin $2\frac{2}{5}$.

Dark brown. Under surface of
 head brownish, with small to
 minute irregular dark or blackish
 brown spots. Inside mouth dark.

Reef, reef Murray Island; New
 Hebrides). — Whitley, Records Austral.
 Mus., vol. 16, no. 1, October 7, 1927, p. 14
 (Michaelmas Cay, North Queensland).

Depth $3\frac{1}{4}$ to 4; head $2\frac{3}{4}$ to 3, width
 $1\frac{2}{3}$ to $2\frac{1}{5}$. Snout $4\frac{1}{8}$ to $4\frac{1}{4}$ in head
 from snout tip; eye $3\frac{1}{5}$ to $3\frac{1}{4}$, greater
 than snout or interorbital; maxillary
 reaches $\frac{1}{4}$ in eye, length 3 in head
 from snout tip; teeth fine, in single
 row in jaws with anterior little enlarged;
 interorbital $5\frac{1}{4}$ to $5\frac{1}{2}$, narrow, nearly
 level. Gill rakers 3+9, short weak
 points, less than gill filaments, which
 $\frac{1}{2}$ of eye.

Scales 23 or 24 in median lateral
 series to caudal base and 4 or 5 more
 on latter; upper section of lateral line
 with 20 or 21 tubular scales, lower
 section with 5 or 6 to caudal base;

Inside gill opening blackish brown.
Iris dark gray. Fins more or
less dusky. Belly with dark gray
tints.

Philippines. Only known from the
type.

U.S.N.M., no. 78223. Sombrero Island,
S. 41° E., 4.50 miles (lat. 13° 45' 15" N., long.
120° 46' 30" E.), China Sea off southern
Luzon. In 236 fathoms. January 16, 1908.
Albatross Collection (D. 5111). Length 311 mm.
Type.

Pseudochromis tapeinoma Bleeker

Pseudochromis tapeinoma Bleeker, Nat. Tijds. Ned. Indië, vol. 4, 1853, p. 115. Amboina.

— Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 258 (compiled). — Weber, Siboga Exped., vol. 57, Fische, 1913, p. 263 (Tumba, Lamakera, Kabala, Karakelang, Lucipara, Tior, Elat).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1927, p. 276 (Philippines).

Pseudochromis tapeinomus Jordan and Seale, Proc. U. S. Nat. Mus., vol. 28, 1905, p. 781 (Leguro).

Pseudochromis (Leptochromis) tapeinoma Bleeker, Verh. Kon. Akad. Wet. Amsterdam, no. 5, vol. 15, 1875, p. 23, pl. 1, fig. 1 (Tumatra, Buru, Ceram, Amboina); Atlas Ichth.

Ind. Néerl., vol. 9, 1877, pl. (1) 394, fig. 1. —

McCulloch, Biol. Res. Endeavour, vol. 5, pt.

4, June 8, 1926, p. 192, pl. 51 (Masthead Island, reef north west Islet, Cairns

1520

Coelorhynchus chilensis Gilbert and Thompson

Coelorhynchus chilensis (Gilbert and Thompson) Thompson, Proc. U. S. Nat. Mus., vol. 50, p. 473, pl. 6, fig. 1, 1916 (type locality: long. $38^{\circ} 8' S.$, long. $75^{\circ} 53' W.$, off Lota, Chile, in 677 fathoms). —

Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 429, 1920 (diagnosis in key).

Depth $6\frac{1}{5}$ to $6\frac{1}{4}$; head $3\frac{1}{5}$ to $3\frac{4}{5}$, width $1\frac{2}{3}$ to 2. Snout to eye $2\frac{1}{2}$ to $2\frac{3}{5}$ in head; eye $4\frac{1}{4}$ to $4\frac{3}{4}$, $1\frac{3}{5}$ to $1\frac{2}{3}$ in snout, $1\frac{1}{10}$ to $1\frac{1}{5}$ in interorbital; orbit 3 to $3\frac{1}{5}$ in head, 1 to $1\frac{1}{8}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{4}$ times interorbital; maxillary reaches $\frac{1}{3}$ to $\frac{1}{2}$ in eye, length from front end $3\frac{1}{5}$ to $3\frac{3}{4}$ in head; mandibular barbel $2\frac{2}{3}$ in eye; teeth in villiform bands in jaws of 5 or 6 irregular rows; interorbital 4 to $4\frac{1}{3}$ in head, low, broadly depressed concavely. Gill rakers 1+7, low spinescent tubercles,

$\frac{1}{4}$ of gill filaments, which $\frac{1}{3}$ in iris.
Scales (pockets) 84 in lateral line; 8? above, 10? below, 11 predorsal forward to occiput. Scales with 4 to 6 radiating apical spinuliferous keels, spinules not passing hind edge of scale; circuli moderate, complete.

D. II, 8 or II, 9 — 70? to 96, second simple ray slender, smooth, nearly $\frac{1}{2}$ of head; interdorsal space $4\frac{1}{3}$; A. 99, fin height (rays broken) apparently less than eye; pectoral rays I, 18, fin $2\frac{1}{8}$ in head; ventral rays I, 6, fin $2\frac{3}{4}$.

Brown, apparently dark. Iris gray. Inside mouth and gill opening blackish brown. Fins brown. Belly gray.

799

Scales 45 to 47 in lateral line to caudal base and 4 or 5 more on latter; 7 scales above lateral line, 14 or 15 below, 14 to 17 predorsal, 7 rows on cheek. Suprascapula entire. Scales with 14 basal radiating striae; apical denticles 73 short feeble points with 8 to 10 transverse series of basal elements; circuli very fine.

D. II, 11, I, fifth spine $2\frac{2}{3}$ to $2\frac{4}{5}$ in total head length, last ray 3 to $3\frac{1}{8}$; A. III, 8, I, third spine $4\frac{1}{3}$ to 5, last ray 3 to $3\frac{1}{8}$; caudal 1 to $1\frac{1}{5}$, deeply forked; least depth of caudal peduncle $3\frac{7}{8}$ to 4; pectoral $2\frac{1}{5}$ to $2\frac{2}{5}$; ventral $2\frac{2}{3}$ to $1\frac{7}{8}$.

Back brown, below paler to whitish. Iris light yellowish brown. Fins all brownish. Ventrals ventral gray terminally.

U. S. N. M., No. 76861. Lat. $38^{\circ}8'N.$,
long. $75^{\circ}53'W.$
Albatross Collection (2791).
Length 294 mm.

U. S. N. M., No. 76889. Lat. $38^{\circ}8'N.$, long.
 $75^{\circ}53'W.$
Albatross Collection (2791).
Length 165? to 213 mm. 11 examples.
Paratypes.

U. S. N. M., No. 76890. Lat. $38^{\circ}8'N.$, long.
 $75^{\circ}53'W.$
Albatross Collection (2791).
Length 204 to 235? mm. 5 examples.
Paratypes.

U. S. N. M., No. 77499. Lat. $38^{\circ}8'N.$, long.
 $75^{\circ}53'W.$
Albatross Collection (2791).
Length 110? to 200? mm. 11 examples, very
poorly preserved and broken.

1523

Coelorhynchus cingulatus Gilbert and Hubbs

Coelorhynchus cingulatus Gilbert and
Hubbs, Bull. U. S. Nat. Mus., No. 100,
vol. 1, p. 480, fig. 15, 1920 (type locality:
China Sea near Formosa, in 230 fathoms).

Depth $7\frac{1}{3}$ to $7\frac{2}{3}$; head $3\frac{1}{3}$ to $3\frac{2}{5}$,
width $2\frac{1}{8}$ to $2\frac{1}{4}$. Snout $2\frac{1}{6}$ to $2\frac{1}{5}$
in head; eye $4\frac{1}{10}$ to $4\frac{3}{5}$, $1\frac{4}{5}$ to $2\frac{1}{6}$
in snout, $1\frac{1}{10}$ to $1\frac{1}{6}$ times interorbital;
maxillary reaches $\frac{2}{3}$ to $\frac{3}{4}$ in eye,
length from front end $4\frac{1}{4}$ to $4\frac{2}{5}$
in head; mandibular barbel $2\frac{2}{5}$ to
4 in eye; teeth in villiform bands
in jaws, of 5 or 6 irregular rows;
interorbital $4\frac{3}{4}$ to $4\frac{4}{5}$ in head,
low, broadly depressed. Gill rakers
0 + 4 low tubercles on second arch,
 $\frac{1}{4}$ of gill filaments, which $\frac{1}{4}$ of eye.

Scales 65 in lateral line to end
of broken tail; 6 above, 12 below, 8 to
11 forward to occiput, and 32 more

forward to front of snout. Scales with 5 to 7 feeble radiating apical spinuliferous keels, last spinules only slightly extended beyond hind scale edge; circuli moderate, complete.

D. II, 8 - 64, second simple ray entire, pungent, fin height (broken) $2\frac{1}{2}$? in head; interdorsal space 7 to 10; A. 62, fin height $4\frac{4}{5}$; pectoral rays I, 16, fin $2\frac{1}{2}$ to $2\frac{7}{8}$ in head; ventral rays I, 6, fin $2\frac{1}{3}$ to $2\frac{2}{5}$.

Brown above, sides and below paler to whitish, especially silvery white over abdominal cavity. Gray tint over belly below. Ventral black streak from ventral fossa on breast to vent. Dark brown preocular and postocular bar and

Fiji.

Sparopsis elongatus Kner, op. cit., vol. 57, pt. 1, 1868, p. 303, pl. 3, fig. 6 (same type as Sparopsis latifrons).

? Aprion honokoni Tanaka, Fishes of Japan, vol. 15, 1914, p. 300, pl. 42, fig. 27.
 Depth $3\frac{3}{4}$ to 4; head $2\frac{1}{8}$ to $3\frac{1}{3}$, width $2\frac{1}{5}$ to $2\frac{1}{3}$. Snout $2\frac{1}{8}$ to $2\frac{2}{3}$ in head from snout tip; eye 4 to $5\frac{1}{8}$, $1\frac{3}{5}$ to $2\frac{1}{4}$ in snout, $1\frac{1}{3}$ to $1\frac{4}{5}$ in interorbital; maxillary not quite reaching eye or $1\frac{1}{8}$ in eye, expansion $1\frac{3}{4}$ to $2\frac{1}{3}$ in eye, length $2\frac{1}{4}$ to $2\frac{2}{5}$ in head from snout tip; teeth in villiform bands in jaws, on vomer and palatines, tongue smooth; an outer enlarged series of teeth in each jaw as conspicuous canines all around, though anterior little largest; interorbital 3 to $3\frac{1}{5}$, but little elevated and mostly level; preopercle entire. Gill rakers 6 + 14, lanceolate, little longer than gill filaments and $1\frac{3}{5}$ in eye.

lower one extends to preopercle angle. Small dark brown spot on occiput. As seen from above 5 variable dorsal dark brown blotches, with paler less conspicuous one in each interval, which may form from one to several dark brown blotches. Fins more or less brownish. Iris grayish. Inside mouth pale. Inside gill opening dusky.

1913, p. 257 (Hulu, Sulu Archipelago).
— McCulloch, Biol. Res. Endeavour, vol. 3, pt. 3, April 21, 1915, p. 143 (Gardner Bank, New Zealand). — Jordan and Starks, Annals Carnegie Mus., vol. 11, nos. 3-4, 1917, p. 450 (Colombo, Ceylon).
— Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 193, pl. 16 fig. C (Honolulu, Hawaiian Islands).

Aprion (Aprion) virescens Bleeker, Atlas Ichth. Ind. Néerl., vol. 8, 1876-77, p. 77 (Celebes, Ternate, Amboina).

Mesoprion microchir Bleeker, Nat. Tijds. Ned. Indie, vol. 5, 1852, p. 332. (Amboina).
— Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 186 (compiled).

Chaetopterus microchir Bleeker, Atlas Ichth. Ind. Néerl., vol. 7, 1875-76, pl. (15) 293, fig. 3.

Xparopsis latifrons Kner, Sitzb. Ber. Akad. Wiss. Wien, vol. 57, pt. 1, 1868, p. 27. (Kandavu,

U. S. N. M., no. 78221, Lat. 21°
 $36' N.$, long. $117^{\circ} 27' E.$, China Sea
vicinity of Formosa. In 230 fathoms.
November 5, 1908. Albatross
Collection (D. 5317). Length 133 mm
to end of broken tail. Type.

U. S. N. M., no. 78233. Lat. 21°
 $36' N.$, long. $117^{\circ} 27' E.$ In 230
fathoms. November 5, 1908.
Albatross Collection (D. 5317). Length
145 mm.

SUB CLASS ACTINOPTERI TRUE FISHES

SERIES GANOIDEI GANOID FISHES

ORDER CHONDROSTEI STURGEONS

FAMILY ACIPENSEIDAE STURGEONS

WASHINGTON CALIFORNIA

1527

Caelorhynchus caelorhynchus (Risso)

Lepidoleprus caelorhynchus Risso,
Ichth. Nice, p. 200, pl. 7, fig. 22,
1810 (type locality: Nice). — Cuvier,

Règne Animal, vol. 2, p. 218, 1817 (reference);
ed. 2, vol. 2, p. 337, 1829 (reference).

Macrourus caelorhynchus Costa, Fauna
Napoli, Pesc., ^{fig. 3-7,} pl. 39, 1829-34. —
Malacott. sottobranch.

Bonaparte, Fauna Italica, Pesc., pt. 1,
Fasc. 30, no pagination, pl., fig. 1, 1841
(Italy). — Canestrini, Fauna Italica,
pt. 3, p. 159, 1874 (Liguria; Sicily).

Macrourus caelorhynchus Moreau, Pois.
France, vol. 3, p. 278, fig. 181, 1881
(Nice; Cete).

Macrurus caelorhynchus Kaup, Arch.
Naturg., vol. 24, pt. 1, p. 91, 1858 (reference).
— Günther, Cat. Fish. Brit. Mus., vol.
4, p. 392, 1862 (copied); Rep. Voy.
Challenger, vol. 22, p. 128, 1887

1528

(Mediterranean; Madeira). — Vaillant,

Expéd. Sci. Travailleur et Talisman,
Poiss., p. 247, pl. 21, figs. 3a-b^(reges), 1888
(Nouadan Coast, Banc d'Arguin, Cape
Verde Islands, Azores, 140 to 580 meters).

— Carus, Prodr. Ichth. mediterr., vol. 2,
p. 582, 1893 (compiled).

(Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 388, 1906 (reference);
macrurus (Coelorhynchus) coelorhynchus
Murray and Hjort, The Depths of the
Ocean, p. 397, 1912.

Oxycephalus coelorhynchus Swainson, Nat.
Hist. Animals, vol. 2, p. 261, 1839 (reference).

Coelorhynchus coelorhynchus Gilbert and
Hubbs, Proc. U.S. Nat. Mus., vol. 51, p. 144,
1916 (reference); Bull. U.S. Nat. Mus., no.
100, vol. 1, p. 425, 1920 (diagnosis in key).

(Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397, 1899
(reference). —

1529

Macrourus mysticetus Bonaparte,
Fauna Italica, Pesc., pt. 1, fasc.
30, 1841, pl., fig. 1 (type locality: Italy).

Macrourus atlanticus Lowe, Proc. Zool.
Soc. London, 1839, p. 88 (type locality:
Madeira).

Macrurus atlanticus Günther, Cat.
Fish. Brit. Mus., vol. 4, p. 392, 1862
(Madeira).

Coelorhynchus atlanticus Goode and Bean,
Oceanic Ichth., p. 397, 1895 (copied).

Macrurus rupestris (not Bloch) Lowe,
Trans. Zool. Soc. London, vol. 2, p. 190,
1837 (1841) (Madeira).

? Krohnus filamentosus Cocco, Intorn.
Pesc. Messina (Lettere A. Cocco, A. Krohn),
p. 15, 144, 1844 (type locality: Messina,
Italy). — Emery, Atti Soc. Ital. Sci. Nat.,
vol. 21, p. 37, 1877.

Depth $6\frac{1}{2}$ to $6\frac{2}{3}$; head $4\frac{2}{3}$ to $4\frac{3}{4}$, width $1\frac{7}{8}$ to 8. Snout eye $2\frac{3}{5}$ to $2\frac{3}{4}$ in head; eye $3\frac{2}{5}$ to $4\frac{2}{3}$, $1\frac{1}{4}$ to $1\frac{7}{8}$ in snout, $1\frac{1}{4}$ times interorbital to $1\frac{1}{4}$ in interorbital with age; orbit 3. to $3\frac{2}{5}$ in head, 1 to $1\frac{1}{4}$ in snout, $1\frac{1}{4}$ to $1\frac{1}{2}$ times interorbital; preoral length $2\frac{2}{5}$ to $3\frac{1}{2}$ in head; mandibular barbel $3\frac{1}{2}$ to $3\frac{3}{5}$ in orbit; teeth minute, in villiform bands in jaws, 4 or 5 irregular rows transversely; interorbital $4\frac{1}{5}$ to $4\frac{1}{4}$ in head, low, slightly convex. Gill rakers 0 + 8, low, spinuliferous tubercles on second arch, $\frac{1}{2}$ of gill filaments, which $\frac{1}{3}$ of eye.

Scales 110 in lateral line; 7 above, 14 below, 14 predorsal forward till opposite hind edge of orbit. Scales with 12 or 13 apical parallel spinuliferous keels, last spinules extending behind scale edge; circuli moderate, complete.

1531

D. II, 7 or II, 8 — 62 to 90, second simple ray slender, entire, length $1\frac{2}{3}$ to $1\frac{3}{4}$ in head; interdorsal space $2\frac{1}{3}$ to $2\frac{2}{3}$; A. 70 to 90, fin height $3\frac{1}{2}$ to $4\frac{1}{5}$; pectoral rays I, 19, fin 2 to $2\frac{1}{10}$ in head; ventral I, 6, fin $2\frac{1}{5}$ to $2\frac{2}{3}$.

Brown, becoming paler on under surface of head and abdomen, though latter underneath and breast tinged with neutral gray. Iris gray. Inside mouth pale. Inside gill opening livid slate. Fins brown, though anal whitish, sprinkled with dusky dots terminally.

Eastern Atlantic, Mediterranean.

U. S. N. M., no. 8571. Mediterranean.
C. L. Bonaparte Collection. Academy
of Natural Sciences of Philadelphia.
Length 188 to 195 mm. 2 examples.

U. S. N. M., no. 42095.
Paris Museum (86 + 137). Length 186
mm.

U. S. N. M., no. 48358. Italy.
S. E. Meek. Length 200 mm.

U. S. N. M., 6 examples.

Albatross Collection (D. 2544). Length 213
to 315 mm.

U. S. N. M., 4 examples.

Albatross Collection (D. 2589). Length
188 to 248 mm.

1533

Coelorhynchus commutabilis Smith and Radcliffe

Coelorhynchus commutabilis Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 43, p. 128, pl. 29,
fig. 2, 1912 (type locality: Palawan Passage,
in 375 fathoms; northern Mindanao; Jolo;
off northern Luzon). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916
(reference); Bull. U. S. Nat. Mus., no. 100, vol.
1, p. ⁽⁴³⁾507, figs. 27 to 29, 1920 (vicinity of
Jolo Island; Palawan Passage; off
eastern Luzon; near Sibuko Bay, Borneo;
260 to 375 fathoms). — Weber and Beaufort,

Fishes Indo Austral. Archip., vol. 5, p. 51,
1929 (compiled).

Coelorhynchus commutabilis, ^{form alpha} Smith and
Radcliffe, Proc. U. S. Nat. Mus., vol. 43,
p. 130, text fig. 3 (top of head), 1912
(Mabul Island, Borneo, 260 fathoms).

1534

Coelorhynchus commutabilis form delta
Smith and Radcliffe, Proc. U. S. Nat. Mus.,
vol. 43, p. 132, text fig. 6 (top of head),
1912 (vicinity of Jolo, 318 fathoms).

Coelorhynchus commutabilis form eta
Smith and Radcliffe, Proc. U. S. Nat.
Mus., vol. 43, p. 132, text fig. 7 (top of
head), 1912 (off northern Luzon, 224
fathoms).

Depth $6\frac{1}{3}$; head $3\frac{2}{5}$, width $2\frac{1}{3}$. Snout
to eye $2\frac{1}{8}$ to $2\frac{1}{3}$ in head; eye $5\frac{1}{4}$ to
 $5\frac{3}{4}$, $2\frac{1}{4}$ to $2\frac{3}{4}$ in snout, $1\frac{1}{4}$ to $1\frac{1}{3}$
in interorbital; orbit 4 in head, $1\frac{2}{3}$
in snout, little greater than 1 in
interorbital; maxillary reaches opposite
hind eye edge, length $3\frac{1}{5}$ to $3\frac{1}{2}$ in
head; mandibular barbel 2 to $2\frac{2}{3}$ in
eye; teeth in villiform bands in jaws
of 6 or 7 irregular rows; interorbital
4 to $4\frac{2}{5}$ in head, low, nearly level.
Gill rakers 0 + 6 or 7, low tubercles

on second arch, about $\frac{1}{4}$ of gill ¹⁵³⁵
filaments, which $\frac{1}{2}$ of eye.

Scales 82 in lateral line to pseudocaudal base; 7 above, 10 or 11 below, 11 predorsal to occiput and about 50 more forward nearly to snout tip. Scales with 3 to 7 radiating spinuliferous apical ridges, last spinules extending beyond hind edges of scales; circuli moderate, complete.

D. II, 8 or II, 9 — 80, second simple ray slender, entire, $2\frac{2}{5}$ in head; interdorsal space $3\frac{1}{4}$ to 4; A. 78, fin height $5\frac{1}{8}$; pseudocaudal small; pectoral rays I, 17, fin $2\frac{4}{5}$ in head; ventral rays I, 6, fin 3.

Brown, paler on under surfaces. Lower surface of head especially paler than rest of head. Iris gray. Inside mouth dusky and in gill opening blackish. Fins brownish.

East Indies, Philippines.

U. S. N. M., No. 72945. Mabul Island
(NW.) N. 22° W., 4.3 miles (lat. $4^{\circ}10'50''$ N.,
long. $118^{\circ}38'08''$ E.), vicinity Sibuko
Bay, Borneo. In 310 fathoms. September
29, 1909. Albatross Collection (D. 5590).
Length 250 to 295 mm. Two examples.

8713 [1173], 12735. Capulaan Bay,
 Pagbilao, Chiriqui Island. February 24,
 1909. Length 138 to 150 mm.

spaces
 dorsal vermilion; irregu-
 lar on posterior dorsal; no blue
 dorsal; red diagonal stripes
 at base.

1537

Coelorhynchus denticulatus Regan

Coelorhynchus denticulatus Regan, Ann.
Mag. Nat. Hist., ser. 9, vol. 7, p. 415,
1921 (type locality: Off Natal). —

Barnard, Ann. South Afric. Mus., vol. 21,
pt. 1, p. 341, June 1925 (compiled).

Coelorhynchus natalensis Fowler, Ann.
Natal Mus., vol. 2, p. 198, fig. 3, 1925
(type locality: off Bluff South East,
Natal, 35 fathoms).

Coelorhynchus dorsalis Gilbert and Hubbs

Coelorhynchus dorsalis Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 469,
fig. 13, 1920 (type locality: off northern
Luzon, in 212 fathoms).

Depth $6\frac{7}{8}$ to $8\frac{7}{8}$; head $3\frac{1}{4}$ to 4,
width $2\frac{1}{4}$. Snout to eye $2\frac{1}{6}$ to $2\frac{1}{4}$ in
head; eye $4\frac{2}{5}$ to 5, $\frac{1}{2}$ to $2\frac{1}{6}$ in
snout, 1 to $1\frac{1}{8}$ times interorbital;
orbit $3\frac{1}{2}$ to $3\frac{2}{3}$ in head, $1\frac{2}{3}$ to $1\frac{3}{4}$
in snout, $1\frac{1}{4}$ times interorbital;
maxillary reaches $\frac{1}{2}$ to $\frac{3}{5}$ in eye,
length from front end $3\frac{3}{4}$ to 4 in
head; mandibular barbel $2\frac{1}{5}$ to $2\frac{1}{2}$
in eye; teeth in villiform bands in
jaws, of 4 or 5 irregular rows;
interorbital 5 to $5\frac{1}{5}$ in head, low
and nearly level forward. Gill rakers
0 + 6, low spiniferous tubercles on
second arch, $\frac{1}{3}$ of gill filaments, which
 $\frac{1}{3}$ of eye.

Scales 110? in lateral line; 6 or 7 above, 12 below, 12 predorsal forward to occiput and 24^{more} forward to end of snout. Scales with 8 to 11 parallel spinuliferous apical keels, mostly not or only very slightly extended beyond scale edge; circuli moderate, complete.

D. II, 8 — 90, second simple ray slender, entire, ends in filament which $1\frac{1}{4}$ to $1\frac{1}{3}$ in head; interdorsal space $3\frac{1}{2}$ to $3\frac{3}{5}$; A. 95, fin height $3\frac{3}{5}$ to $4\frac{1}{5}$; pseudocaudal very small; pectoral rays I, 16, fin $1\frac{7}{8}$ to 2 in head; ventral rays I, 6, fin 2 to $2\frac{1}{8}$.

Light brown, with slight traces of silvery white tints on sides. Head pale, nearly whitish below. Belly and breast with grayish tint. Iris whitish. Inside mouth pale.

Pectoral pointed, much smaller than ⁷⁹⁶
ventral.

A single wide ranging species of
the Indo-Pacific.

Aprion virescens Valenciennes

- Aprion virescens Valenciennes, Hist. Nat.
Poiss., vol. 6, 1830, p. 544, pl. 168. Vexcheller.
— Günther, Cat. Fishes Brit. Mus., vol. 1,
1859, p. 81 (compiled). — Guichenot, Notes
— Playfair, Proc. Zool. Soc. London, 1867, p. 846 (Vexcheller).
Ile Réunion, vol. 2, 1862, p. 24. — Günther,
Journ. Mus. Godeffroy, vol. 1, pt. 1, 1873, p.
16 (Society and Hawaiian Islands). —
— Lunel, Mém. Soc. Physique Hist. Nat. Genève, vol. 27, 1881, p. 268 (Mauritius).
— Jenkins, Bull. U. S. Fish Comm., vol. 22,
1902 (1903), p. 452 (Honolulu). — Snyder,
Bull. U. S. Fish Comm., vol. 22, 1902 (1904),
p. 527 (Honolulu). — Jordan and Evermann,
Bull. U. S. Fish Comm., vol. 23, pt. 1, 1903
(1905), p. 237, fig. 99 (Honolulu, Hilo,
Kailua). — Weber, Siboga Exped., vol. 57,

dusky. Fins pale.
Philippines.

1540

U.S.N.M., no. 78219. Font Island (W.),
N. 28° E., 24. 25 miles (lat. 18° 33' N., long.
121° 37' 30" E.), off northern Luzon.
In 212 fathoms. November 19, 1908.
Albatross Collection (D. 5329). Length
200 mm. Type.

Genus Aprion Valenciennes

Aprion Valenciennes, Hist. Nat. Poiss., vol. 6, 1830, p. 543. Type Aprion virescens Valenciennes, monotypic.

Xparopsis Kner, Sitzb. Ber. Akad. Wiss. Wien, vol. 58, 1868, pp. 27, 302. Type Xparopsis latifrons Kner, monotypic.

Body slender, fusiform, well compressed. Head pointed, compressed. Snout conic. Eye small. Lower jaw slightly protrudes. Teeth in several rows in jaws, on vomer and palatines. Scales 50 to 60 in lateral series. Temporal region, jaws and opercles scaly, muzzle and maxillary scaleless. Dorsal and anal scaleless, caudal covered with fine scales. Dorsal undivided, spines 10, rays 11 or 12 with last one elongated. Anal spines 3, rays 8 or 9 with last one elongated. Caudal lobes acute.

U. S. No. In., No. 78232. Hermanos
Island (N.), N. 69° E., 8 miles (lat.
18° 32' 30" N., long. 122° 01' E.), off
northern Luzon. In 230 fathoms.
November 12, 1908. Length 158 mm.
Paratype.

52708 U.S.N.M. Hawaiian Islands.
Bureau of Fisheries. Length 455 mm.
As Apsilus brighami.

57784 U.S.N.M. Honolulu.
Bureau of Fisheries 1909.
Type of Rooseveltia aloha.

62367 U.S.N.M. Honolulu.
L. V. Jordan 1908.

1 example. A.N.S.P. Honolulu.
Bishop Museum. Length 373 mm.
1 example. A.N.S.P. Honolulu.
Henry W. Fowler, Length 275 mm.

Coelorhynchus doryssus Gilbert ¹⁵⁴²

Coelorhynchus doryssus Gilbert, Bull.
U. S. Fish Comm., vol. 53, pt. 2, p.
675, pl. 94, 1903 (1905) (type locality:
Kaiwi Channel; and off Oahu, in 9 to
44 fathoms; Kauai; Oahu, 192 to 449
fathoms). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916
(reference); Bull. U. S. Nat. Mus., no.
100, pt. 7, p. (432) 515 (name). —

Fowler, Mem. Bishop Mus., vol. 10, p.
86, 1928 (type; Hawaiian Islands).

macrurus (Coelorhynchus) doryssus Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
p. 388, 1906 (reference).

Depth $6\frac{1}{5}$ to $8\frac{3}{5}$; head $2\frac{9}{10}$ to $3\frac{2}{3}$, width 2. Snout to eye $2\frac{1}{8}$ to $2\frac{1}{5}$ in head; eye $4\frac{1}{5}$ to 7, 2 to 3 in snout, $1\frac{1}{8}$ to $1\frac{1}{4}$ in interorbital; orbit $3\frac{7}{8}$ to $4\frac{7}{8}$ in head, $1\frac{4}{5}$ to $2\frac{1}{8}$ in snout, 1 in interorbital; maxillary reaches opposite hind eye edge, length from front end 4 in head; mandibular barbel $\frac{1}{2}$ of eye; teeth in villiform bands in jaws, of 6 or 7 irregular rows; interorbital $3\frac{1}{8}$ to 5 in head, low and nearly level forward. Gill rakers 0 + 6 low spiniferous tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $2\frac{1}{2}$ in eye.

Scales 78 in lateral line; 6 above, 14 below, 7 predorsal forward to occiput. Scales

793

of caudal peduncle $2\frac{4}{5}$ to 3;
pectoral $1\frac{1}{10}$ to $1\frac{1}{8}$; ventral
 $1\frac{1}{4}$ to $1\frac{1}{3}$.

Brown, paler to whitish below,
upper surface of head usually darker.
Three dark oblique broad bands on
back and upper sides, variably
wider or narrower than pale
interspaces. Fins all pale.

Mauritius, Madagascar, Hawaii.
A very handsome species, largely
yellow with 3 inclined red bands
and head red. Reaches 450 mm.

with 1 to 8 parallel apical spinuliferous ridges, median largest and last extend little beyond hind scale edge; circuli moderately fine, complete.

D. II, 78 — 75, second simple ray slender and entire, first branched ray $2\frac{3}{5}$ to $3\frac{1}{8}$ in head; interdorsal space equals eye; A. 71, fin height 8 in head; pseudocaudal $\frac{4}{5}$ of eye; pectoral rays I, 16, fin 2 to $3\frac{1}{3}$ in head; ventral rays I, 6, fin $2\frac{1}{8}$ to 4 in head.

Brown, head little paler. Iris grayish. Under surface of head pale, grayish around gill opening. Inside mouth pale. Inside gill opening neutral black. Belly little grayish. Fins

below rudimentary, lanceolate, greater than gill filaments or $\frac{1}{2}$ of eye.

Scales 62 to 66 in lateral line to caudal base and 5 to 8 more on latter; 9 or 8 scales above lateral line, 16 or 17 below, 16 to 18 predorsal forward to occiput opposite hind eye edge, 6 or 7 rows on cheek to preopercle ridge.

Suprascapula denticulate. Scales with 9 or 10 basal radiating striae; apical denticles 61 to 95, with 6 to 12 transverse series of basal elements; circuli fine.

D. X, 10, I, third spine $2\frac{2}{3}$ to $2\frac{3}{4}$ in total head length, second ray $2\frac{3}{4}$ to $2\frac{4}{5}$; A. III, 8, I, third spine $3\frac{1}{5}$ to $3\frac{1}{3}$, first ray $2\frac{2}{3}$ to $2\frac{3}{4}$; caudal $1\frac{1}{8}$ to $1\frac{1}{5}$, deeply forked; least depth

dusky or dark brown.

1545

Hawaiian Islands.

U. S. N. M., No. 51616.

Albatross Collection (D.).
Length 345 mm. Type.

U. S. N. M., No. 51661.

Albatross Collection (D.).
Length 40 to 88 mm. 3 examples.

Mus., vol. 5, 1916, p. 182 (Moreton Bay).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia, 1927, p. 278 (Buluan).

Caesio chrysozona Fowler, Mem. Bishop Mus., vol. 10, 1925, p. 204 (compiled).

Caesio striatus (not Rüppell) Bleeker, Nat. Geneesk. Arch. Ned. Indië, vol. 2, 1845, p. 521 (Java).

Pristipomoides aurolineatus Day, Proc. Zool. Soc. London, 1867, p. 937. Madras.

Caesio chrysozona var. aurolineatus Day, Fishes of India, pt. 1, 1875, p. 95, pl. 24, fig. 5.
Caesio coerulaveus (not Lacepède) Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, 1922, p. 37 (Cebu).

Depth 3 to $3\frac{2}{3}$; head 3 to $3\frac{1}{3}$, width $1\frac{1}{8}$ to $2\frac{1}{4}$. Snout 4 in head from snout tip; eye $3\frac{1}{2}$ to 4, greater to subequal with snout or interorbital; maxillary reaches to or $\frac{1}{5}$ in eye, length $2\frac{1}{8}$ to 3 in head from snout tip; teeth minute, narrow bands in

1546

Coelorhynchus fasciatus (Günther)

Macrurus fasciatus Günther, Ann. Mag. Nat. Hist., ser. 5, vol. 2, p. 24, July 1, 1878 (type locality: western coast of southern extremity of South America, in 120 to 245 fathoms); Rep. Voy. Challenger, vol. 22, p. 129, pl. 28, fig. A, 1887 (types). — Gilchrist, Mar. Invest. South Africa, vol. 3, p. 135, 1905 (eggs; off Cape Point).

Macrurus (Coelorhynchus) fasciatus Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 259 (388), 1906 (lat. $33^{\circ}41'2''$ S., long. $18^{\circ}0'3''$ E., in 178 meters, off South Africa; lat. $35^{\circ}16'$ S., long. $22^{\circ}26'7''$ E., in 155 fathoms).

Coelorhynchus fasciatus Goode and Bean, Oceanic Ichth., p. 402, 1895 (copied). —

Garman, Mem. Mus. Comp. Zool., vol. 24, p. 397, 1899 (reference). — McCulloch,

1547

Records Austral. Mus., vol. 6, pt. 5,
p. 348, 1907 (Tasman Sea). — Thompson,
Proc. U.S. Nat. Mus., vol. 50, p. 473,
1916 (between Hanover Island and mainland;
between Wellington Island and mainland).

— Gilbert and Hubbs, Proc. U.S. Nat. Mus.,
vol. 51, p. 144, 1916 (reference); Bull.
U.S. Nat. Mus., no. 100, vol. 1, p. 426, 1920
(diagnosis in key). — Barnard, Ann.

South Afric. Mus., vol. 21, pt. 1, ^{p. 340,} June
1925 (Cape Point and south slope
Agulhas Banks, 89 to 250 fathoms). —

McCulloch, Fishes of New South Wales,
ed. 2, p. 32, pl. 11, fig. 115 b, 1926.

Coelorhynchus (Paramacrurus) fasciatus
McCulloch, Biol. Res. Endeavour,
vol. 5, pt. 4, p. 177, June 8, 1926
(south east Gabo Island; eastern
edge Bass Strait; north east of
Babel Island; 35 miles south east

1548

Bruni Island; south east from,
south and south west from Eucla;
70 to 450 fathoms).

Coelorhynchus fasciatus McCulloch,
Austral. Mus. Mem., no. 5, pt. 1, p.
126, July 29, 1929 (reference).

Depth $5\frac{3}{4}$ to $6\frac{1}{5}$; head $4\frac{1}{4}$ to $4\frac{1}{3}$,
width $1\frac{3}{5}$ to $1\frac{4}{5}$. Snout to eye
 $3\frac{2}{5}$ to $3\frac{2}{3}$ in head; eye $2\frac{1}{2}$
to $2\frac{3}{4}$, $\frac{1}{8}$ to $\frac{1}{5}$ times greater
than snout, $\frac{1}{2}$ times greater than
interorbital; orbit $2\frac{1}{4}$ to $2\frac{3}{5}$ in
head, $\frac{1}{3}$ times greater than snout,
 $\frac{1}{2}$ to $\frac{3}{5}$ times greater than interorbital;
maxillary reaches $\frac{2}{5}$ to $\frac{1}{2}$ in eye,
length from front end $3\frac{2}{3}$ in
head; mandibular barbel $3\frac{1}{5}$ in
eye; villiform teeth in bands in
jaws, in 5 or 6 irregular rows;
interorbital $3\frac{7}{8}$ to $5\frac{4}{5}$ in head,
low, nearly level or only slightly
concave. Gill rakers 10 + 6 low
spinescent tubercles on second arch,

¹⁵⁴⁹
 $\frac{1}{4}$ of gill filaments, which $\frac{1}{4}$ of eye.

Scales 110 in lateral line; 4 above, 8 below, 9 predorsal forward to occiput. Scales with 11 or 12 parallel or only slightly radiating apical spinuliferous keels, last spinules projecting beyond scale edge; circuli moderate, complete.

D. II, 9-70, second simple ray entire, slender, $\frac{1}{2}$ to $\frac{1}{3}$? in head; interdorsal space 5 to $5\frac{1}{5}$; A. 86, fin height 4 to $4\frac{1}{5}$ in head; pectoral rays I, 16, fin $1\frac{4}{5}$ to 2; ventral rays I, 6, fin $1\frac{3}{4}$ to $1\frac{7}{8}$.

Brown, usually paler on snout and muzzle. Iris pale to gray. Inside mouth and gill opening

20953. Tomah Island. December 11,
1909. Length 62 to 85 mm. 4 examples.

8419. Nan Wan, Formosa. January 25,
1910. Length 172 mm.

8414. Hokenao, Ho Wan, Formosa.
January 29, 1910. Length 140 mm.

dark to blackish brown. Fins¹⁵³⁰
brownish, paired ones paler.

Off southern South America,
South Africa, Tasman Sea.
The dark areas or marblings
shown in Günther's figures are
now hardly evident in any of
my examples.

U. S. N. M., no. 77289.

Albatross Collection (D. 2783).

Length 215 to 295 mm. 2 examples.

U. S. N. M., no. 77290.

Albatross Collection (D. 2784).

Length 205 to 245 mm. 4 examples.

20, 1909. Length 86 to 118 mm.

915

16226. Cape Kait, Libani Bay, Celebes.
December 29, 1909. Length 155 mm.

14869 to 14871. Dolepo and Tasejogo Islands,
Gulf of Tomin, Chili. November 16, 1909.
Length 103 to 123 mm.

22675 to 22677. Labuanlata Bay, Gulf
of Bini, Celebes. December 18, 1909. Length
113 to 138 mm.

22882. Tugian Bay, Tugian Island,
Celebes. November 19, 1909. Length 113 mm,
4 examples. Sadaa, Celebes. November 17, 1909. Length 112 to 116 mm.
12472, to 12477, 13127, 13846, 21088.

Powati Harbor, Makyan Island. November
28, 1909. Length 110 to 162 mm.

9984. Maitara Island. November 26, 1909.
Length 129 mm.

13225. Loworra Island. December 2, 1909.
Length 130 mm.

1557

Coelorhynchus flabellispinnis (Alcock)

Macrurus flabellispinnis Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 123, 1894 (type locality: Laccadive Sea, in 719 fathoms).

Macrurus (Coelorhynchus) flabellispinnis Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 126, 1894 (diagnosis in key); Cat Deep Sea Fishes Indian Mus., p. 107, 1899 (Arabian Sea, 719 fathoms). — Brauer,

Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 258, 1906 (Simons Bay, South Africa, 70 meters; west coast of Sumatra, 470 to 750 meters; north east coast of Africa, 628 to 741 meters).

Macrurus flabellispinnis Alcock, Illustrat. Zool. Investigator, pt. 3, pl. 16, figs. 2 to 2a, 1895 (type). — Garman, Mem. Mus.

Comp. Zool., vol. 24, p. 388, 1899 (reference).

Coelorhynchus flabellispinus Garman,
Mem. Mus. Comp. Zool., vol. 24, p. 397,
1899 (reference). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916
(name); Bull. U. S. Nat. Mus., no. 100, vol.
1, p. (430) 497, 1920 (reference). —

Barnard, Ann. South Afric. Mus.,
vol. 21, pt. 1, p. 341, June 1925
(reference).

Coelorhynchus flabellispinnis (Alcock)

Macrurus flabellispinnis Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 123, 1894 (type locality: Laccadive Sea, 719 fathoms).

Macrurus (Coelorhynchus) flabellispinnis Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 126, 1894 (diagnosis in key); Illustrat. Zool. Investigator, pt. 3, pl. 16, figs. 2 to 2a, 1895 (type); Cat. Deep Sea Fishes Indian Mus., p. 107, 1899 (Arabian Sea, 719 fathoms). — Garman,

Mem. Mus. Comp. Zool., vol. 24, p. 388, 1899 (reference). — Brauer, Deutsch. Tiefsee

Exped. Valdivia, vol. 15, p. 258, 1906 (Simons Bay, South Africa, 70 meters; west coast of Sumatra, 470 to 750 meters; north east coast of Africa, 628 to 741 meters

1553

Coelorhynchus gladius Gilbert and Cramer

Coelorhynchus gladius Gilbert and Cramer,
Proc. U. S. Nat. Mus., vol. 19, p. 421,
pl. 41, fig. 3, 1897 (type locality:
Hawaiian Islands, in 295 fathoms). —

Garman, Mem. Mus. Comp. Zool., vol. 24, p.
397, 1899 (reference). — Gilbert, Bull.

U. S. Fish Comm., vol. 23, pt. 2, p. 673, 1903
(1905) (off Oahu and Kauai, 192 to 352 fathoms).

— Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
vol. 51, p. 144, 1916 (reference); Bull. U. S.
Nat. Mus., no. 100, vol. 1, p. 514, 1920
(measurements of types). — Fowler, Mem.

Bishop Mus., vol. 10, p. 86, 1928 (compiled).

Macrurus (Coelorhynchus) gladius Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
p. 388, 1906 (reference).

Depth $9\frac{1}{2}$; head $3\frac{3}{4}$, width $2\frac{2}{5}$.

Snout to eye $1\frac{4}{5}$ in head; eye $6\frac{1}{3}$, $3\frac{3}{5}$ in snout, $1\frac{1}{4}$ in interorbital; orbit $4\frac{3}{4}$ in head, $2\frac{1}{2}$ in snout, equals interorbital; maxillary reaches $\frac{3}{4}$ in eye, length $4\frac{4}{5}$ in head; mandibular barbel $\frac{1}{2}$ of eye; minute villiform teeth in bands in jaws, of 5 irregular rows; interorbital $5\frac{1}{5}$ in head, low, level. Gill rakers 0+7 low spiniferous tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $2\frac{3}{4}$ in eye.

Scales 100? in lateral line; 6 above, 12? below, 10 forward to occiput which slightly before upper hind or vertical edge of preopercle. Scales with 7 parallel ridges of spinules, last of which extend

Gesell., vol. 25, 1900, p. 419 (Ternate). —
Borsieri, Ann. Mus. Civico Genova, vol.
 41, 1904, p. 195 (Massana). — Weber,
 Siboga Exped., vol. 57, Fische, 1913, p.
 284 (Kangeang, Macassar; Kawa, Ceram;
 Saleyer; Binongka; Banda). ~~Strobel,~~
~~and Bean, Jour. U. S. Nat. Mus., vol.~~
~~62, 1922, p. 37 (Cebu).~~ — Barnard, Annals
 South African Mus., vol. 21, pt. 2, October
 1927, p. 650 (Katal coast).

Caesio (Caesio) caeruleaureus Sauvage, Hist.
 Nat. Madagascar, Poiss., 1891, p. 170, pl. 16,
 fig. 2-a.

Amaris mauritianus Duoy and Gaimard,
 Voy. Uranie, Zool., December 18, 1824, p.
 290, pl. 44, fig. 3. Mauritius.

~~Caesio caeruleo-taeniatus (Chrenberg)~~
Cuvier, Hist. Nat. Poiss., vol. 3, 1830, p. 435.
~~Red Sea. (name in text.)~~

Caesio azuraureus Rüppell, Atlas Reise
 Nordl. Afrika, Fische, 1828, p. 130. Djedda.

beyond hind scale edge; circuli rather coarse, complete.

D. II, 10 — 87?, second simple ray slender, entire, $2\frac{1}{8}$ in head; interdorsal space $\frac{1}{2}$ of eye; A. 85?, rays slender, fin height $5\frac{2}{5}$ in head; pectoral rays I, 17, fin $2\frac{1}{3}$ in head; ventral rays I, 6, fin $2\frac{4}{5}$.

Body brownish, head and under surfaces paler or very light brownish. Iris gray. Inside mouth and gill opening pale. Belly grayish. Fins pale, first dorsal dusky to blackish terminally. Hawaiian Islands.

Fisher, vol. 26, 1906 (1907), p. 83 (Bacon,
 Zamboanga, Yap, Tabian). — Gilby, Mem.
 Queensland Mus., vol. 2, December 10, 1913, p.
 92 (off Moreton Bay). — Regan, Annals
 Durban Mus., vol. 2, 1915, p. 76 (Natal). —
Fowler, Copeia, No. 58, June 18, 1918, p. 63
 (Philippines); Proc. Acad. Nat. Sci. Philadelphia,
 1927, p. 218 (Zamboanga; Philippines); Mem.
 Bishop Mus., vol. 10, 1928, p. 204 (Kingsmills,
 Shortland Island, New Guinea, Apia).
Caesio coerulaurens Kner, Reise Novara, Fische,
 1865, p. 65 (Java). — Klunzinger, Verhandl.
 zool. bot. Gesell. Wien, vol. 20, 1870, p. 770
 (Koseir, Red Sea). — Bleeker, Atlas Ichth.
 Ind. Néerl., vol. 8, 1876-77, p. 39, pl. (69)
 347, fig. 4 (Sumatra, Nias, Singapore, Java,
 Bali, Celebes, Halmahera, Ternate, Batjan,
 Buru, Ceram, Amboina, Banda). —
Klunzinger, Fische Roth. Meer., 1884, p. 46.
 — Steindachner, Abhandl. Senckenberg.

1556

U. S. N. M., No. 47706. Lat. $21^{\circ}12'N$, long.
 $157^{\circ}49'W$. In 295 fathoms. December 4, 1891.

Albatross Collection (D. 3472). In
295 fathoms. Length 165 mm. Type.
Also very small specimen, 53 mm
long, with same data. It differs
in the broad snout but without
the long point of the type.

Caesio caerulea Lacépède

Caesio caerulea Lacépède, Hist. Nat. Poiss., vol. 3, 1802, pp. 85, 86. Moluccas.
 — Cuvier, Hist. Nat. Poiss., vol. 6, 1830, p. 434 (Red Sea; Gombod; Trinquemale, Ceylon; Mauritius; Bourbon; Pondicherry). —
Valenciennes, Hist. Nat. Poiss., vol. 6, 1830, p. 559 (note). — Cantor, Journ. Asiat. Soc. Bengal, vol. 18, pt. 2, 1849, p. 1036 (Pinang).
 — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 392 (copied). — Guichenot, Notes Ile Réunion, vol. 2, 1862, p. 25. — Playfair, Fishes of Zanzibar, 1866, p. 32 (Zanzibar). — Bleeker, Nederl. Tijds. Dierk., vol. 4, 1874, p. (117) 150 (China).
 — Peters, Monatsber. Akad. Wiss. Berlin, 1876, p. 437 (Mauritius). — Fowler, Journ. Acad. Nat. Sci. Philadelphia, series 2, vol. 12, 1904, p. 528 (Padang). — Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 266 (Apia). — Evermann and Seale, Bull. Bur.

1557

Coelorhynchus innotabilis McCulloch

Coelorhynchus innotabilis McCulloch,
Records Austral. Mus., vol. 6, no. 5,
p. 348, pl. 63, figs. 2 to 2a, July 18,
1907 (type locality: 35 miles East
of Sydney, New South Wales, in
800 fathoms). — Gilbert and Hubbs,

Bull. U. S. Nat. Mus., no. 100, vol. 1, p. (429)
429 (diagnosis in key). — McCulloch,

Fishes of New South Wales, ed. 2, p. 32,
pl. 11, fig. 115a, 1926.

Coelorhynchus (Paramacrurus) innotabilis
McCulloch, Biol. Res. Endeavour, vol.
5, pt. 4, p. 180, June 8, 1926 (eastward
of Bass Strait). — Whitley, Fishes

New South Wales, McCulloch, ed. 2, 1927
(p. 3 unnumbered) (reference).

Coelorhynchus innotabilis McCulloch,
Austral. Mus. Mem., no. 5, pt. 1, p. 126,
June 29, 1929 (reference).

1558

Coelorhynchus japonicus (Schlegel)

Macrurus japonicus Schlegel, Fauna Japonica, Hoiss., pts. 10 to 14, p. 256, pl. 112, figs. a to b, 1846 (type locality: bays provinces Omura and Simabara).

Macrurus japonicus Günther, Rep. Voy. Challenger, vol. 22, p. 127, pl. 29, fig. PC (scale), 1887 (south of Japan, 345 fathoms).

— Steindachner and Döderlein, Denks. Akad. Wiss. Wien, Math.-nat. Cl., vol. 53, p. 283, 1887 (Japan). — Garman, Mem.

Mus. Comp. Zool., vol. 24, p. 397, 1899 (reference).

Macrurus (Coelorhynchus) japonicus Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 388, 1906 (reference).

Oxycephalus japonicus Kaup, Archiv Naturg., vol. 24, pt. 1, p. 91, 1858 (reference).

1559

Coelorhynchus japonicus Jordan and Snyder, Annot. Zool. Japon., vol. 3, p. 120, 1901 (Yokohama, Nagasaki, Amura, Shimabara). — Jordan and

Starks, Bull. U. S. Fish Comm., vol. 22, p. 617, 1902 (1904) (Misaki; Nagasaki).

— Franz, Abhandl. Kon. Bayer. Akad. Wiss., vol. 4, Suppl. Band 1, p. 26, 1910 (Yokohama; Aburatsubo). — Jordan,

Tanaka, Snyder, Journ. College Sci. Tokyo, vol. 33, pt. 1, p. 418, 1913 (Tokyo to Nagasaki). — Jordan and Thompson, Mem.

Carnegie Mus., vol. 6, no. 4, p. 306, Sep. 1914 (Misaki). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. (145) 178, 1916 (east central Hondo; Suruga Gulf; 197 to 297 fathoms); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 431, 1920 (diagnosis in key).

Depth $6\frac{2}{5}$ to 8; head 3 to $3\frac{1}{3}$, width 2 to $2\frac{1}{3}$. Snout to eye 2 to $2\frac{1}{10}$ in head; eye $5\frac{1}{2}$ to $6\frac{4}{5}$, $2\frac{4}{5}$ to $3\frac{1}{5}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{4}$ in interorbital; orbit $4\frac{1}{2}$ in head, $1\frac{7}{8}$ in snout, greater than interorbital; maxillary reaches $\frac{4}{5}$ in eye, length from front end $3\frac{7}{8}$ to $4\frac{1}{3}$ in head; mandibular barbel $1\frac{1}{3}$ to $1\frac{1}{2}$ in eye; villiform teeth in bands in jaws, of 7 or 8 irregular rows; interorbital 5 to $5\frac{1}{5}$ in head, low, nearly level, with slight median concavity. Gill rakers 0+6 low spiniferous tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $2\frac{1}{4}$ in eye.

Scales 146 in lateral line to pseudocaudal; 6 or 7 above, 12 or 13 below, 11 or 12 predorsal forward to

32732 U.S.N.M. Indian Archipelago.
Royal Museum Leiden. Length 153 mm.

56130 U.S.N.M. Baron Bureau
of Fisheries (4010). Length 133 mm.

56207 U.S.N.M. Baron Bureau
of Fisheries (3703). Length 133 mm.

56224 U.S.N.M. Baron Bureau
of Fisheries (3702). Length 133 mm.

71841 U.S.N.M. Japan. Albatross
Collection. Length 240 mm.

71883 U.S.N.M. Japan. Albatross
Collection. Length 240 mm.

2 examples (with 75493 U.S.N.M.). Ikafo,
Okunawa, Riu Kiu. Albatross Collection
1906. Length 236 to 240 mm.

84215 U.S.N.M. ^{Cebu} Philippines. Dr. F. Baker.
Length ²⁰⁵~~135~~ mm. Dis Caesio coerulea.

occiput. Scales with 3 to 6 radiating spinuliferous apical ridges, last spinules projecting beyond hind edge of scale; circuli moderate, complete.

D. II, 9 or II, 10 — 135?, second simple ray slender, entire, length $2\frac{3}{4}$ to 3 in head; interdorsal space equals eye; A. 120?, fin height $4\frac{1}{3}$ in head; pseudocaudal variably very small, large as eye; pectoral rays I, 17, fin $2\frac{2}{3}$ to $2\frac{4}{5}$ in head; ventral rays I, 6, fin $2\frac{2}{3}$ to $3\frac{1}{2}$.

Brown, muzzle and snout little paler. Iris gray. Inside mouth and gill opening dusky to neutral black. Fins all more or less dark brown.

Japan.

946

Caesio digramma Bleeker

Caesio digramma Bleeker, Nederl. Tijdschr.
Dierk., vol. 2, 1865, p. 180. Ambonia;
Atlas Ichth. Ind. Néerl., vol. 8, 1876-77,
p. 40, pl. (56) 334, fig. 1 (Ambonia).
Caesio digramma Weber, Siboga Exped.,
vol. 57, Fische, 1913, p. 285 (Macassar;
Saleyer).

Depth $3\frac{1}{2}$ to $3\frac{3}{5}$; head $3\frac{1}{4}$ to $3\frac{3}{5}$,
width $1\frac{3}{5}$ to $1\frac{2}{3}$. Snout $3\frac{1}{8}$ to $4\frac{1}{8}$
in head from snout tip; eye $3\frac{3}{4}$ to $3\frac{4}{5}$,
greater to subequal with snout, subequal
with interorbital to $1\frac{1}{5}$ in interorbital;
maxillary reaches eye, expansion $2\frac{2}{3}$ to
 $2\frac{3}{4}$ in eye, length $2\frac{7}{8}$ to 3 in head
from snout tip; teeth simple, conic,
uniserial, small, largely concealed;
interorbital $3\frac{1}{4}$ to $3\frac{2}{5}$, broadly
convex; preopercle flange with parallel

U.S.N.M., no. 51437.

Misaki, Japan. D.S. Jordan and
J.O. Snyder. Length 320 (no. 1696)
and 448 (no. 1682) mm.

U.S.N.M., no. 77200.

Albatross Collection (D. 4968).

Length 349 mm.

U.S.N.M., no. 77201.

Albatross Collection (D. ⁴⁹⁶⁷~~3901~~).

Length 310 mm.

U.S.N.M., no. 77202.

Japan. Albatross Collection (D. 5062).

Length 166 mm.

terminally. Caudal light brown, each lobe with median broad dusky band longitudinally, contrasted at all ages. Other fins all pale, upper base of pectoral with neutral dusky triangular blotch, less than pupil in size.

Red Sea, Zanzibar, Natal, Mauritius, Bourbon, Reunion, India, Ceylon, Pinang, East Indies, Philippines, China, Queensland, Micronesia, ~~Melanesia~~, Polynesia.

1563

Coelorhynchus jordani Smith and Pope

Coelorhynchus jordani Smith and Pope,
Proc. U. S. Nat. Mus., vol. 31, p. 494,
fig. 11, 1906 (type locality: Kagoshima,
Japan). — Jordan, Vanaka, Nyder,

Journ. College Sci. Tokyo, vol. 33, pt. 1,
p. 419, 1913 (fig. 389 copied). — Gilbert

and Hubbs, Proc. U. S. Nat. Mus., vol. 51,
p. (144) 191, 1916 (Kagoshima; Eastern
Sea; Kagoshima Gulf; 115 to 207 fathoms);
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
427, 1920 (diagnosis in key).

Depth $6\frac{1}{2}$ to 8; head $4\frac{1}{3}$ to $4\frac{1}{2}$, width
2 to $2\frac{3}{5}$. Snout to eye $2\frac{1}{2}$ to $2\frac{3}{5}$ in
head; eye $3\frac{2}{3}$ to 4, $1\frac{1}{4}$ to $1\frac{3}{5}$ in snout,
slightly to $\frac{1}{4}$ greater than interorbital;
orbit $2\frac{7}{8}$ to $3\frac{1}{10}$ in head, 1 to $1\frac{1}{8}$ in
snout, nearly $\frac{1}{3}$ to $\frac{2}{5}$ greater than
interorbital; maxillary reaches about
 $\frac{2}{3}$ to $\frac{3}{4}$ in eye, length $3\frac{1}{2}$ to $3\frac{7}{8}$ in
head; mandibular barbel 2 in eye;

bands of villiform teeth in jaws,
 of 5 or 6 irregular rows; interorbital
 $3\frac{3}{4}$ to $4\frac{3}{4}$ in head, low to nearly
 level anteriorly, with slender
 median depression. Gill rakers
 $0 + 7$ low spiniferousⁿⁱ tubercles
 on second arch, $\frac{1}{4}$ of gill filaments,
 which $\frac{1}{3}$ of orbit.

Scales 100? in lateral line;
 6 above, 12 below, 11 forward to
 occiput. Scales with 8 to 14 nearly
 parallel series of spinuliferous
 ridges, last spinules projecting
 over hind edge of scale; circuli
 moderate, complete.

D. II, 9 — 90, second simple ray
 slender, entire, $1\frac{1}{4}$ to $1\frac{1}{3}$ in head;
 interdorsal space $2\frac{4}{5}$ to $4\frac{7}{8}$; A.
 90, fin height $3\frac{2}{5}$ to $3\frac{4}{5}$; pectoral
 rays I, 16, fin $1\frac{3}{4}$ to $1\frac{4}{5}$ in head;

~~Caesiostriatus Rüppell~~

Caesiostriatus Rüppell, Atlas Reis. Hördl.
Seydau, Fische, 1828, p. 131, pl. 34, fig. 1.

Massama. — Günther, Cat. Fishes Brit.

Mus., vol. 1, 1857, p. 392 (Red Sea). —

Playfair, Fishes of Zanzibar, 1866, p. 32
(Zanzibar; Veycheller).

Caesio coerules-taeniatus (Ehrenberg) Cuvier,
Hist. Nat. Poiss., vol. 3, 1830, p. 435. Red
Sea. (name in text.)

ventral fin I, 6, fin $2\frac{1}{3}$ to $2\frac{2}{5}$.

Brown, little paler below. Under surface of head light or very pale. Throat, breast and chest with rather dark neutral gray shades. Eye slate. Inside mouth pale, in gill opening blackish. Fins brownish.

Japan.

I follow Klunzinger in placing Caesio striatus Rüppell as a synonym of this species, differing only in the presence of 4 or 5 blackish longitudinal bands on the back.

Caesio maculatus Cuvier is described as metallic green with a mélange of yellow tints and scattered sky blue spots, a few turning to greenish. Although Günther admits the species, as it is without the yellow lateral band along the lateral line, this usually fades in most alcoholic specimens. I have examples exactly as Cuvier describes which are evidently Caesio caeruleus.

1566
U.S.N.M., no. 55609. Kagoshima,
Japan. June 16, 1903. Dr. H.M. Smith.
Length 191 mm. Type.

U.S.N.M., no. 77197. Kagoshima.
Albatross Collection (D.)
Length 125 to 230 mm. 5 examples.

U.S.N.M., no. 77198. Chirinjima, S.
12.5° E., 6.6 miles (lat. 31° 23' 10" N.,
long.)

In 118 fathoms. August 17, 1906.
Albatross Collection (D. 4942). Length
75? to 147 mm. 2 examples, smaller
poorly preserved.

U.S.N.M., no. 77199.

In 119 fathoms. August 17, 1906.
Albatross Collection (D. 4943). Length
75? to 205 mm. 7 examples, in poor
preservations.

not Castelnau

Leptocephalus multidentus (Castelnau)

Conger multidentus Castelnau, Animal
Amer. Sud, Paris, vol. 2, 1855, p. ,
pl. 44, fig. 1. Rio de Janeiro. — Kaup,
Archiv Naturges., 1856, pt. 1, p. 72 (reference);
Cat. Apodal Fish Brit. Mus., 1856, p.
114 (copied). — Pöhl, Cat. Mus. Godeffroy,
no. 9, 1884, p. 40 (Viti Levu). — Whitley,
Journ. Pan Pacific Res. Inst., vol. 2, no.
1, Jan. March 1927, p. 4 (on Pöhl).

? Conger orbignyanus Dalencienne, Egy.
Amer. Mérid. D'Orbigny, vol. 5, 1847,
p. 10, pl. 12, fig. 1. South America. —
Fowler, Mem. Bishop Mus., vol. 11, no.
5, 1931, p. 316 (reference).

1567

Coelorhynchus kishinouyei Jordan and Snyder

Coelorhynchus kishinouyei Jordan and Snyder,
Proc. U. S. Nat. Mus., vol. 23, p. 376,
pl. 20, 1901 (type locality: Misaki,
Sagami); Ann. Zool. Japon., vol. 3,
p. 120, 1901 (Yokohama). — Jordan

and Starks, Bull. U. S. Fish Comm.,
vol. 22, p. 618, fig., 1902 (1904) (type).

— Jordan, Tanaka, Snyder, Journ. College
Sci. Tokyo, vol. 33, pt. 1, p. 420, ~~fig. 39~~
(fig. 39 copied) 1913. — Gilbert and

Hubbs, Proc. U. S. Nat. Mus., vol. 51,
p. (144) 170, 1916 (Suruga Gulf, 197 to
250 fathoms); Bull. U. S. Nat. Mus.,
no. 100, vol. 1, p. 427, 1920 (diagnosis
in key).

1568

Depth $6\frac{3}{5}$ to $7\frac{1}{5}$; head $4\frac{7}{8}$ to $5\frac{1}{5}$, width 2 to $2\frac{1}{8}$. Snout to eye $2\frac{3}{4}$ to 3 in head; eye $3\frac{4}{5}$ to $3\frac{7}{8}$, $1\frac{1}{3}$ in snout, greater than interorbital; orbit $2\frac{3}{4}$ to $2\frac{9}{10}$ in head, 1 in snout, $1\frac{1}{3}$ times interorbital; maxillary reaches $\frac{1}{2}$ to $\frac{3}{5}$ in eye, length from front end $3\frac{3}{5}$ to $3\frac{2}{3}$ in head; mandibular barbel 3 in eye; bands of villiform teeth in jaws, of 5 or 6 irregular rows; interorbital 4 to $4\frac{2}{3}$ in head, low, level anteriorly. Gill rakers 0 + 7 low spinuliferous tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $2\frac{1}{2}$ in eye.

Scales 120 in lateral line; 5 above, 14 below, 14 predorsal forward to occiput. Scales with 15 to 19 nearly parallel apical

A887, 12785. Limbe Strait. November
10, 1909. Length 60 to 260 mm.

21500. Gane Road, Sillolo Island.
December 1, 1909. Length 116 mm.

2 examples. Gomomo Island, Pitt. Passage.
December 3, 1909. Length 90 to 107 mm.

17916, 18493, 18494. Tomakeke Island,
Celebes. December 21, 1909. Length 55 to 152 mm.

6 examples. Tomahu Island. December 11,
1909. Length 44 to 55 mm.

29 examples. Tomahu Island. December 12,
1909. Length 45 to 61 mm.

A1051. Tidore Island, south of Ternate.
November 24, 1909. Length 265 mm.

30594 U.S.N.M. New Guinea, Australian
Museum. Length 103 to 118 mm. 3 examples.

52469 U.S.N.M. ————— Bureau of
Fisheries. Length 86 to 108 mm. 5 examples.

56068 U.S.N.M. Bacon Bureau of
Fisheries (3481). Length 190? mm.

1569

spinuliferous ridges and last
spinules extend slightly beyond
hind edge of scale; circuli complete,
rather fine.

D. II, 9 - 110?, second simple
ray slender, entire, $1\frac{2}{5}$ in head;
interdorsal space $2\frac{1}{5}$ to $2\frac{1}{3}$; A.
108, fin height $2\frac{9}{10}$ to $3\frac{1}{8}$;
pectoral rays I, 15, fin $1\frac{2}{5}$ to $1\frac{1}{2}$
in head; ventral rays I, 6, fin $2\frac{1}{2}$.

Brown, skin where scales
have fallen more or less with
silvery white tints. Under surface
of head pale to whitish. Iris
silvery white. Breast and belly
grayish. Inside mouth and gill
opening pale. Fins brownish,
ventrals darker.

Japan.

10414 to 10416, 10442, 19091 to 19093.

Varadero Bay, Mindoro. July 23, 1908.

Length 81 to 117 mm.

A 1295. Eki, Bowro, Dutch East Indies.
December 9, 1909. Length 260 mm.

17845. Bumbun Island, Borneo.
September 25, 1909. Length 151 mm.

17706. Sipadan Island. September 28,
1909. Length 150 mm.

A 689. Hi Umil Island. September 26,
1909. Length 260? mm.

13487. Basa Reef, Gulf of Boni, Celebes.
December 17, 1909. Length 204 mm.

14872. Dodepo and Pasejajo Islands, Gulf
of Tomini, Celebes. November 16, 1909. Length 132 mm.

A 1489. Cape Kait, Libani Bay, Celebes.
December 29, 1909. Length 246 mm.

13463. Limbe Strait, Celebes. November 9,
1909. Length 175 mm.

U.S.N.M., no. 49395. Misaki,
Japan. K. Otaki. (no. 1511.)
Length 335 mm. Type.

U.S.N.M., no. 77195. Ose Saki,
S. 57.5° E., 7.5 miles (lat. 35°5'40"
N., long. 38°39'30"E.), Suruga Gulf
Japan. In 211 to 235 fathoms.
October 15, 1906. Albatross
Collection (5065). Length 270 to
297 mm. 3 examples.

U.S.N.M., no. 77196. Ose Saki, S. 65.5°
E., 9.2 miles (lat. 35°5'20"N., long. 138°
37'10"E.), ^{Suruga Gulf, Japan.} In 250 fathoms. October
13, 1906. Albatross Collection (5062).
Length 255 mm.

6511, 12488. Tara Island. December 14, 1908. Length 178 to 200 mm.

4919, 4920, 12201. Tataan, Sinalue Island. February 20, 1908. Length 150 to 245? mm.

3 examples. Tataan. February 19, 1908. Length 71 to 98 mm.

14293. Tomabal Island. September 18, 1909. Length 187 mm.

10459, ~~44555, 15555~~ Tilig. July 14, 1908. Length 70 mm.

15534, 15535. Tilig. July 15, 1908. Length 117 to 127 mm.

35 examples. Tanguil Island, east of Gumila. September 14, 1909. Length 52 to 69 mm.

6653. Tute Bay, first anchorage. September 19, 1909. Length ^{145 to} 160 mm. 2 examples.

243. Ulugan Bay, Palawan. December 29, 1908. Length 173 mm.

Coelorhynchus labiatus (Köhler) ¹⁵⁷¹

Macrurus labiatus Köhler, Ann. Univ. Lyon, vol. 26, p. 407, pl. 27, fig. 7 (head below), fig. 8 (scale), 1896 (type locality: lat. $46^{\circ}34'N.$, long. $6^{\circ}52'W.$, in 570 to 700 meters; Gulf of Gascony, 1700 meters).

Macrurus (Macrurus) labiatus Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 388, 1966 (reference).

Coelorhynchus labiatus Gilbert and Hubbs, Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 425, 1920 (name).

Caecorhinus

abyssicola macrochir (Günther)

1572

Macrurus macrochir Günther, Ann.

Mag. Nat. Hist., ser. 4, vol. 20, p. 438,
1877 (type locality: off Enoshima in
Sagami Bay, 345 fathoms); Rep. Voy.
Challenger, vol. 22, p. 148, pl. 29, fig.
B, 1887 (type). — Goode and Bean,

Oceanic Ichth., p. 417, 1895 (reference).

Macrurus (Malacocephalus) macrochir

Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, p. 391, 1906 (reference).

Malacocephalus macrochir Garman, Mem.

Mus. Comp. Zool., vol. 24, p. 394, 1899
(reference).

Abyssicola macrochir Jordan and Snyder,

Proc. U. S. Nat. Mus., vol. 23, p. 376,

1900 (off Tokyo) is — Jordan and Gilbert,

Bull. U. S. Fish Comm., vol. 22, p. 607,

1902 (1904) (Sagami Bay). — Franz,

Annot. Zool. Japon., vol. 3, p. 119, 1901 (reference).

1573

Abhandl. Kon. Bayer. Akad. Wiss., vol.
4, Suppl. band 1, p. 26, 1910 (Aburatsubo).

— Jordan, Tanaka, Snyder, Journ. College
Sci. Tokyo, vol. 33, p. 414, 1913 (compiled).

— Gilbert and Hubbs, Proc. U. S. Nat.
Mus., vol. 51, p. (145) 183, 1916 (Eastern
Sea; Bungo Channel; off Matsushima
Bay; 129 to 437 fathoms).

Depth $7\frac{1}{4}$ to $7\frac{9}{10}$; head $4\frac{4}{5}$ to $5\frac{1}{6}$,
width $2\frac{1}{4}$. Snout $2\frac{3}{5}$ to 3 in head;
eye $3\frac{1}{10}$ to $5\frac{1}{8}$, 1 to $1\frac{4}{5}$ in snout,
1 to $1\frac{2}{3}$ in interorbital; maxillary
reaches to or slightly beyond hind
eye edge, length from its front end
 $2\frac{1}{2}$ to $2\frac{7}{8}$ in head; teeth simple,
conic, curved, in 2 or 3 series in front
above and lower irregularly uniserial
or biserial; mandibular barbel

{ Coelorhynchus macrochir Gilbert and
Hubbs, Bull. U. S. Nat. Mus. ^{No. 100,} vol. 1, p. 425,
1920 (diagnosis in key).

1574

small, thin, $\frac{1}{4}$ of eye; interorbital $3\frac{1}{5}$ to $3\frac{1}{3}$ in head, low, broadly convex. Gill rakers $1+8$ low spinescent tubercles on second arch, $\frac{1}{3}$ of gill filaments, which $2\frac{2}{3}$ in eye.

Scales 102 to 120? in lateral line, of which 19 to 21 forward of vent; 5 above, 12 to 18 below, 12 to 14 predorsal forward to occiput or close behind hind orbital edge. Scales with 8 to 10 radiating articulated ridged striae apically, not projecting behind scale edge; Circuli moderately fine, more or less complete.

D. II, 7 to II, 9 - 110, first branched ray $1\frac{7}{8}$ to 2 in head; second dorsal origin begins well before end of depressed first dorsal rays, ^{pseudo}caudal very small or little developed; A. 104; pectoral rays I, 15, fin $1\frac{2}{3}$ in head; ventral rays I, 6, fin $2\frac{2}{3}$ to $3\frac{1}{2}$.

Uniform brownish, where scales have fallen pockets blackish brown. Iris pale brown. Inside mouth and

gill opening blackish. Fins brown. ¹⁵⁷⁵⁻

Japan. My specimens all differ from Günther's figure in showing a large maxillary, which reaches nearly or quite till opposite hind eye edge or beyond.
U. S. N. M., No. 51469.

Length 523 to 527 mm. 2 examples.
U. S. N. M., No. 51470.

Length 530 mm.

Chaetodon citrinellus Cuvier.

362

Chaetodon citrinellus (Broussinet) Cuvier,
Hist. Nat. Poiss., vol. 7, 1831, p. 27. Guam; Tahiti.
— Valenciennes, Règne Animal Poiss. Ill., 1839,
plate 39, fig. 1 (Guam). — Günther,
Cat. Fish. Brit. Mus., vol. 2, 1860, p. 33 (Amboina,
Fiji). — Günther, Journ. Mus. Godeffroy,
band 2-3^{left} 5-6, 1874, p. 47, plate 35, fig. B
(Panmotus, Society Islands, Bonham Island,
Samoa, Fiji). — Von Martens, Preuss. Exped. Ost.
Asien, 1876, p. 388 (Amboina). — Ogilby, Mem.
Queensland Mus., vol. 1, 1892, p. 54 (on Chaetodon nigrifrons).
— Elera, Cat. Fauna Filip., vol. 1, 1895, p. 487
(Luzon, Batangas, Nasugbu). — Jordan and
Evermann, Proc. U. S. Nat. Mus., vol. 25, 1903, p.
357 (Kotosho, Formosa). — Jordan and Richardson,
Bull. Bur. Fisher., vol. 27, 1907 (1908), p. 269
(Pagayancillo). — Jordan and Snyder, Proc.
U. S. Nat. Mus., vol. 42, 1912, p. 510 (Okinawa).

U. S. N. M., No. 77247.

1576

Albatross Collection (). Length
85 to 178 mm. 24 examples.
U. S. N. M., No. 77248.

Albatross Collection (). Length
347 to 377 mm. 3 examples.
U. S. N. M., No. 77278.

Albatross Collection (). Length
537 to 568 mm. 2 examples.
U. S. N. M., No. 77279.

Albatross Collection (): Length 580 mm.

1577

Coelorhynchus macrolepis Gilbert and
Hubbs

Coelorhynchus macrolepis Gilbert and
Hubbs, Bull. U. S. Nat. Mus., no. 100, vol.
1, p. 477, fig. 14, 1920 (type locality:
vicinity of southern Luzon; Balayan
Bay, 193 to 233 fathoms).

Depth $5\frac{1}{3}$; head $2\frac{9}{10}$, width $2\frac{1}{8}$.
Snout to eye $2\frac{1}{3}$ in head; eye $3\frac{3}{4}$,
 $1\frac{1}{3}$ in snout, $1\frac{1}{5}$ times interorbital;
maxillary reaches $\frac{1}{2}$ in eye, length
from front end $4\frac{1}{5}$ in head;
mandibular barbel $\frac{1}{4}$ of eye; teeth
in villiform bands in jaws, of 5
or 6 irregular rows; interorbital
 $5\frac{1}{4}$ in head, low and nearly level
anteriorly, with concave median
depression. Gill rakers 0 + 6 low
spinescent tubercles on second arch,
 $\frac{1}{3}$ of gill filaments, which $3\frac{2}{5}$
in eye.

Scales 48 in lateral line to
rather large pseudocaudal; 5 above,

1578

9? below, 10 predorsal forward to occiput. Scales with 9 to 11 parallel or scarcely radiating spinuliferous apical beaks, last spinules extending beyond scale edges; circuli coarse, complete.

D. II, 9 - 37, second simple ray entire, slender, 2 in head; interdorsal space $3\frac{3}{4}$; A. 43, fin height 4; pseudocaudal $3\frac{7}{8}$; pectoral rays I, 15, fin 2 in head; ventral rays I, 6, fin $2\frac{1}{2}$.

Light brown, head paler, especially below. Breast and belly dark neutral gray. Iris grayish. Inside mouth and gill opening blackish brown. Fins brownish. Ventrals darker or tinged with dusky.

13356, 13357. Nablayan, Mindoro.

December 13, 1908. Length 145 mm.

17595. San Miguel Point, Tabaco Bay, Luzon. June 4, 1909. Length 153 mm.

12003 to 12005. San Miguel Harbor, Ticao Island. April 21, 1908. Length 162 to 198 mm.

2 examples. San Roque, Leyte. July 29, 1909. Length 101 to 108 mm.

6921, 6923. Santo Domingo, Batan. November 7, 1908. Length 246 to 250 mm.

5863. Shore below Mindanao River mouth, Mindanao. May 20, 1908. Length 195 mm.

4903, 4904. Sanga, near Siassi. February 17, 1908. Length 275 to 291 mm.

A631 to A633. Simalur Island, north of Tawi Tawi. September 22, 1909. Length 250 to 305 mm.

16201, 16202. Tapanak Island. January 7, 1909. Length 99 to 113 mm.

Philippines.

1579

U. S. N. M., No. 78220. Sombrero
Island, S. 41° E., 4.50 miles (lat.
13° 45' 15" N., long. 120° 46' 30" E.),
China Sea off southern Luzon.

In 236 fathoms. January 16, 1908.
Length 138 mm. Type.
Albatross Collection (D. 5111).

12457. Bugsuk, Balabac. January 5, 1909. Length 102 mm.

19649. Bulan Island, Sulu Group. September 13, 1909. Length 148 mm.

16325. Endeavor Strait, north west coast Palawan. December 23, 1908. Length 114 mm.

12507. North west Verde Island. July 22, 1908. Length 214 mm.

12428, 12430, 20528, 20529. Port Galera, Mindoro. October 27, 1907. Length 149 to 172 mm.

15835. Vitanki Reef. September 24, 1907. Length 164 mm.

14292. Ternate Island. September 18, 1909. Length 173 mm.

19192, 19193. Tualutan Island. September 9, 1909. Length 163 to 198 mm.

14070. Uai, Buru. December 9, 1907. Length 107 mm.

2 examples. Limbe Strait, Celebes. November 10, 1909. Length 67 to 73 mm.

1580

Coelorhynchus macroⁿrhynchus Smith and Radcliffe

Coelorhynchus macrorhynchus Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 127, pl. 29, fig. 1, 1912 (type locality: Verde Island Passage, in 180 fathoms).—

Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 511, 1920 (off southern Luzon; Verde Island Passage, north of Tawi Tawi; vicinity of Sibuko Bay, Borneo; 180 to 415 fathoms).

— Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 52, 1929 (compiled).

1581

Coelorhynchus maculatus Gilbert and Hubbs

Coelorhynchus maculatus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
(427) 446, fig. 9, 1920 (type locality: off
southern Luzon; Batangas Bay, between
Gillolo and Makyan; 214 to 298 fathoms).

— Weber and Beaufort, Fishes Indo Austral.
Archip., vol. 5, p. 41, 1929 (copied).

Depth $6\frac{1}{3}$; head $3\frac{3}{4}$, width 2. Snout
 $2\frac{4}{5}$ in head; eye $3\frac{7}{8}$, $1\frac{1}{4}$ in snout,
 $1\frac{1}{5}$ times interorbital; mandibular
barbel 4 in eye; villiform teeth in bands
in jaws, of 5 or 6 irregular rows;
interorbital $4\frac{1}{2}$ in head, low, nearly
level forward. Gill rakers 0+5 low
spinecent tubercles on second arch,
 $\frac{1}{3}$ of gill filaments, which $\frac{1}{3}$ of eye.

{ maxillary in head, length from front
end ;

Scales 66 in lateral line to end of broken tail; 6 above, 11 below, 10 predorsal to occiput, which at first fourth between hind eye edge and dorsal origin. Scales with 5 radiating apical spinuliferous keels, last spinules extending behind hind scale edge; circuli moderate, complete.

D. II, 9-57?, second simple ray entire, flexible, prolonged, length $1\frac{1}{6}$ in head; interdorsal space $4\frac{1}{4}$; A. 65?, fin height $3\frac{1}{5}$; pectoral rays I, 15, fin 2 in head; ventral rays I, 6, fin $1\frac{7}{8}$.

Body pale brown, under surface of head pale to whitish and abdomen more or less dark gray. Iris gray to whitish. Fins pale brownish, first dorsal and ventral

Cassio chrysozona Cuvier

Cassio chrysozona (Kuhl and Van Hasselt)
Cuvier, Hist. Nat. Poiss., vol. 6, 1831, p. 440.
 East Indies. — Günther, Cat. Fishes Brit.
 Mus., vol. 1, 1857, p. 392 (Moluccas). —
Kner, Reise Novara, Fische, 1865, p. 65
 (Java). — Bleeker, Atlas Ichth. Ind.
 Néerl., vol. 7, 1873-76, pl. (29) 307, fig. 2;
 vol. 8, 1876-77, p. 39 (Nias, Java, Sunda
 Islands, Bawean, Celebes, Flores, Ternate,
 Amboina, Banda). — Boulenger, Proc.
 Zool. Soc. London, 1887, p. 657 (Muscat). —
Day, Fauna British India, Fishes, vol. 1,
 1889, p. 533. — Ishikawa and Matsuura,
 Prelim. Cat. Fishes Mus. Tokyo, 1897, p. 54.
 — Evermann and Seale, Bull. Bur. Fisher.,
 vol. 26, 1906 (1907), p. 83 (Bacon). — Weber,
 Siboga Exped., vol. 57, Fische, 1913, p. 285
 (Macassar). — Ogilby, Mem. Queensland

dusky. Inside mouth pale. Inside
gill opening dusky.

East Indies, Philippines.

U. S. N. M., no. 78215. Makyan Island
(S.), N. 54° W., 3 miles (lat. $0^{\circ}15'$ N., long.
 $127^{\circ}24'35''$ E.), between Gilolo and
Makyan Islands. In 298 fathoms.
November 28, 1909. Albatross Collection
(^{Dep} 5621). Length 173^{mm} to end of broken
tail. Tail.

little less than gill filaments or $1\frac{3}{4}$ in eye.

Scales 48 to 56 in lateral line to caudal base and 4 to 7 more on latter; 7 or 8 scales above lateral line, 11 to 13 below, 27 or 28 predorsal opposite front pupil edge of which 21 or 22 extend to occiput, 5 or 6 rows on cheek. Scales with 7 to 11 basal radiating striae; circuli very fine.

D. X, 14, I, third spine $1\frac{3}{5}$ to 2 in total head length, first ray $3\frac{1}{8}$ to $3\frac{1}{4}$; A. III, 12, I, third spine $3\frac{1}{8}$ to $3\frac{1}{4}$, first ray $3\frac{2}{5}$ to $3\frac{2}{3}$; caudal 1, deeply forked, lobes slender; least depth of caudal peduncle $3\frac{1}{3}$ to $3\frac{4}{5}$; pectoral $1\frac{1}{8}$ to $1\frac{1}{5}$; ventral $1\frac{3}{5}$ to $1\frac{3}{4}$.

Back brown, variably dark according to preservation. Below whitish. Iris slaty. Dorsals grayish, little darker

1584

Coelorhynchus mirus (Mc Culloch)

Coelorhynchus (Paramacrurus) mirus
Mc Culloch, Biol. Res. Endeavour, vol.
5, pt. 4, p. 178, pl. 46, June 8, 1926
(type locality: east of Sydney, in 150
fathoms; off Montague Island, New
South Wales, 70 to 100 fathoms; eastern
edge of Bass Strait, 100 to 220 fathoms).

Coelorhynchus mirus Mc Culloch, Austral.
Mus. Mem., no. 5, pt. 1, p. 127, June 29,
1929 (reference).

1585

Coelorhynchus notatus Smith and Radcliffe

Coelorhynchus notatus Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 43, p. 136, pl. 30,
fig. 3, 1912 (type locality: Sulu Archipelago,
in 230 fathoms). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 144, 1916
(reference); Bull. U. S. Nat. Mus., no. 100,
vol. 1, p. 462, 1920 (type). — Weber

and Beaufort, Fishes Indo Austral.
Archip., vol. 5, p. 43, 1929 (copied).

Depth $6\frac{3}{5}$; head $4\frac{1}{6}$, width $1\frac{4}{5}$.
Snout $2\frac{3}{4}$ in head; eye $3\frac{3}{4}$, $1\frac{1}{4}$ in
snout, $1\frac{1}{4}$ times interorbital; maxillary
reaches $\frac{2}{5}$ in eye, length from front
end 4 in head; mandibular barbel
 $2\frac{3}{5}$ in eye; teeth in villiform bands
in jaws, of 6 or 7 irregular rows;
interorbital 5 in head, low, level
forward. Gill rakers 0+7, low spinose
tubercles on second arch, $\frac{1}{4}$ of gill
filaments, which $2\frac{1}{5}$ in orbit.

Depth $6\frac{3}{5}$; head $4\frac{1}{6}$, width $1\frac{4}{5}$.
Snout $2\frac{3}{4}$ in head; eye $3\frac{3}{4}$, $1\frac{1}{4}$ in
snout, $1\frac{1}{4}$ times interorbital;
maxillary reaches $\frac{2}{5}$ in eye, length
from front end $1\frac{1}{4}$ in head;
mandibular barbel $2\frac{3}{5}$ in eye;
villiform teeth in bands in jaws,
of 6 or 7 irregular rows; interorbital
5 in head, low, level forward.
Gill rakers 0 + 7 low spinescent
tubercles on second arch, $\frac{1}{4}$ of gill
filaments, which $2\frac{1}{5}$ in orbit.

Scales 102 in lateral line; 6
above, 15 below, 9 predorsal to
occiput. Scales with 7 to 9 nearly
parallel apical spiniferous
ridges, last spinules extended
well beyond hind scale edge;
cirradi moderate, complete.

~~Local. Azusa, B. Lake, West. A. Ca.~~
~~Azusa.~~

Coesio azureus Thiollière, Fauna
 Woodlark, 1857, p. 162. Woodlark Island.

Coesio nori (Montrouzier) Thiollière,
 op. cit., 1857, p. 162 (name in synonymy).

Depth 3 to $3\frac{2}{3}$; head $2\frac{7}{8}$ to $3\frac{3}{5}$,
 width $1\frac{3}{4}$ to $2\frac{1}{8}$. Snout $3\frac{3}{5}$ to $4\frac{1}{3}$ in
 head from snout tip; eye 3 to 5, greater
 than snout in young to $1\frac{1}{5}$ with age,
 greater than interorbital in young to
 $1\frac{1}{5}$ with age; maxillary reaches to or
 $\frac{1}{5}$ in eye, expansion $2\frac{1}{5}$ to 3 in eye,
 length $2\frac{3}{4}$ to $3\frac{1}{5}$ in head from snout
 tip; row of minute, simple conic teeth
 in each jaw, very minute or absent
 from palate; interorbital $3\frac{1}{4}$ to $3\frac{3}{4}$,
 broadly convex; preopercle with broad
 lobe, with concealed marginal denticles.
 Gill rakers 8 + 25, lanceolate, slender,

D. II, 9-98, second simple ray slender, entire, length $1\frac{2}{5}$ in head; interdorsal space $3\frac{2}{3}$; A. 98?, fin height $4\frac{1}{8}$?; pectoral rays I, 15, fin $2\frac{1}{4}$ in head; ventral rays I, 6, fin $2\frac{1}{5}$.

Brown, paler on under surface of head. Large dark brown rounded blotch above pectoral basally, second one at front of second low dorsal and third one little before middle of second low dorsal. Iris slate. Inside mouth pale. Inside gill opening blackish brown. Fins brownish.

Philippines. This is one of the few species with contrasted color markings - and its large dark blotch at once serves to

~~Coesia maculatus Cuvier~~

- Coesia maculatus Cuvier, Hist. Nat. Poiss., vol. 6, 1830, p. 439. Vanicolo. — Günther, Cat. Fishes Brit. Mus., vol. 1, 1859, p. 391 (Madagascar, Hong Kong, Amboina). — Bleeker, Nederl. Tijds. Dierk., vol. 1, 1863, p. 344 (Madagascar); Atlas Ichth. Ind. Néerl., vol. 8, 1876-77, p. 38 (copied). — Schmeltz, Cat. Mus. Godeffroy, vol. 6, 1877, p. 12 (Pelew Island). — Meyer, Anales Soc. Españ. Hist. Nat. Madrid, vol. 14, 1885, p. 20 (North Celebes; Cebu). — Beaufort, Bijdragen Dierk. Amsterdam, pt. 19, 1913, no. 9, p. 122 (Majalibit Bay, Waigiu; Ambon). — Weber, Siboga Exped., vol. 57, Fische, 1913, p. 285 (Ambon). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 204 (compiled). Coesia maculatus Elera, Cat. Fauna Filip., vol. 1, 1895, p. 477 (Cebu).

distinguish it.

1588

5.40 miles

Trinagta Island (S.), N. $71^{\circ}W$, N.

U. S. N. M., No. 72948. (Lat. $5^{\circ}10'N$, long. $119^{\circ}47'30''E$), Sulu Archipelago.
In 230 fathoms. February 22, 1908.

Albatross Collection (D. 5162). Length
270 mm. Type.

Sept 6

21473. Howorra Island. December 2, 1909. Length 93 mm.

⁹⁶⁸⁹ 1700, ¹⁴⁴¹ 1701, Talisse Island. November 9, 1909. Length 148 to 157 mm.

The following specimens all lack the black pectoral spot.

22412. Endeavor Strait, Palawan. December 23, 1908. Length 65 mm.

21975. Murcillago Bay, Mindanao. August 9, 1909. Length 68 mm.

13530, 13532. Uki, Bouro Island, Dutch East Indies. December 9, 1909. Length 130 to 229 mm.

16587. Tula-lutan Island, east of Zamboanga. September 9, 1909. Length 65 mm.

22834, 22835. Daisy Island, west of Bumbun. January 6, 1910. Length 66 to 73 mm.

13537. Lane Road, Gillolo Island.

December 1, 1909. Length 106 mm.

13539. Malayan Island. November 29, 1909. Length 201 mm.

1589

Coelorhynchus occa Goode and Bean

macurus occa Goode and Bean,
Proc. U. S. Nat. Mus., vol. 8, p. 595,
1885 (1886) (type locality: lat. $28^{\circ}34'N$,
long. $86^{\circ}48'W$, Gulf of Mexico, in
335 fathoms). — Günther, Rep. Voy.

Challenger, vol. 22, p. 124, 1887
(remarks).

Coelorhynchus occa Goode and Bean,
Oceanic Ichth., p. 400, pl. 95, figs. 332
to 333 (head), pl. 96, figs. 337 (profile),
1895 (type). — Jordan and Evermann,

Bull. U. S. Nat. Mus., no. 47, pt. 3, p.
2588, 1898 (copied). — Garman, Mem.

Mus. Comp. Zool., vol. 24, p. 397, 1899
(reference). — Gilbert and Hubbs, Proc.

U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference).
— Jordan, ~~and~~ Evermann, Clark, Rep. U.
S. Comm. Fisher., p. 207, 1928 (1930)
(compiled).

1590

Macrurus (Coelorhynchus) oceana Brauer,
Deutsch. Tiefsee Exped. Valdivia,
vol. 15, p. 388, 1906 (reference).

Depth $6\frac{7}{8}$ to 8; head $3\frac{1}{6}$ to $3\frac{1}{2}$,
width $2\frac{1}{8}$ to $2\frac{1}{5}$. Snout to eye 2
to $2\frac{1}{3}$ in head; eye $5\frac{1}{8}$ to $5\frac{3}{4}$,
 $2\frac{1}{5}$ to 3 in snout, $1\frac{1}{8}$ to $1\frac{1}{6}$ in
interorbital; orbit $4\frac{3}{5}$ to 5 in head,
 $1\frac{7}{8}$ to $2\frac{1}{4}$ in snout, 1 in interorbital;
maxillary reaches $\frac{3}{4}$ in orbit, length
from front end $4\frac{1}{5}$ to 5 in head;
mandibular barbel $2\frac{1}{2}$ in orbit;
bands of villiform teeth in jaws, of
4 or 5 irregular rows; interorbital
 $4\frac{1}{2}$ to $5\frac{1}{4}$ in head, low, but slightly
convex. Gill rakers 0+6 low spinous
tubercles on second gill arch, $\frac{1}{3}$ of
gill filaments, which $\frac{1}{4}$ of eye.

Scales 83 in lateral line to
pseudocaudal; 6 above, 15 below, 9
precaudal forward to occiput. Scales
with 5 or 6 slightly radiating apical
spinuliferous beaks, last spinules

1591

extend back beyond hind scale edge; circuli moderate, complete.

D. II, 9-75, second simple ray slender, front edge entire, length 3 to $3\frac{3}{4}$ in head; interdorsal space $5\frac{4}{5}$ to 7; A. 80, fin height $5\frac{3}{5}$? to $5\frac{2}{3}$; pseudocaudal $2\frac{1}{2}$ to $3\frac{1}{2}$; pectoral rays I, 17, fin 3 to $3\frac{1}{5}$ in head; ventral rays I, 6, fin $3\frac{1}{5}$ to $3\frac{3}{4}$.

Uniformly brown. Snout and under surface of head. Inside mouth brown. Inside gill opening black. Iris gray.

Gulf of Mexico, Gulf Stream.

s
 , dashes of green
 ps; edges of lobes p
 anal pink, silvery at bas
 h a black blotch; iris s.

14456, 14457. Cuyo Island, Cuyo.

April 9, 1907. Length 88 to 89 mm.

16326. Endeavor Strait, west coast of
 Palawan. December 23, 1908. Length 110 mm.

16655, 22332. Galera Bay, Mindoro.

June 9, 1908. Length 68 to 73 mm.

18785. Subat Bay, Luzon. June 23, 1909.
 Length 214 mm.

7442, 7484, 9486. Guntao Island,
 Palawan Passage. December 20, 1908. Length
 226 to 240? mm.

6351, 7135. Inamucan Bay, Mindanao.
 August 8, 1909. Length 118 to 198 mm.

4720, 4721. Ligo Point, Balayan Bay.
 January 18, 1908. Length 200 to 213 mm.

U. S. N. M., no. 37334. Lat. ¹⁵⁹² $28^{\circ}34'N$,
long. $86^{\circ}48'W$.

In 335 fathoms.

Albatross Collection (D. 2396).

Length 430 mm. Type. Also
paratype 280 mm.

U. S. N. M., no. 45828. Lat. $32^{\circ}24'N$, long.
 $76^{\circ}55'30''W$.

October 21, 1885. Albatross Collection
(D. 2628). Length 426 mm.

U. S. N. M., no. 45829. Lat. $32^{\circ}27'30''N$,
long. $77^{\circ}20'30''W$. In 353 fathoms. October
21, 1885. Albatross Collection (D. 2626).
Length 257 to 262 mm. 2 examples.

U. S. N. M., no. 45871. Lat. $28^{\circ}40'N$, long.
 $78^{\circ}46'$. In fathoms. May 3, 1886.
Albatross Collection (D. 2660). Length
365 mm

U. S. N. M., no. 45875. Lat. $32^{\circ}39'N$, long. 77°
 $1'W$. In fathoms. May 6, 1886.
Albatross Collection (D. 26076). Length 135
mm.

1593

Caelorhynchus parallelus (Günther)

Macrurus parallelus Günther, Ann.
Mag. Nat. Hist., vol. 20, p. 439, 1877
(type locality: off Enoshima, Japan);
Rep. Voy. Challenger, vol. 22, p. 125,
pl. 29, figs. A, A'—A'', 1887 (off New
Zealand, 700 fathoms; off Kermadec,
600 to 630 fathoms; type, 345 fathoms;
off Japan 565 fathoms). — Alcock,

Ann. Mag. Nat. Hist., ser. 6, vol. 4, p.
391, 1889 (lat. $6^{\circ}29'N.$, long. $79^{\circ}34'E.$, in
597 fathoms, Gulf of Manar).

Macrurus (Caelorhynchus) parallelus
Alcock, Journ. Asiatic Soc. Bengal, vol.
63, pt. 2, p. 126, 1894 (diagnosis in key);
Cat. Deep Sea Fish Ind. Mus., p.
106, 1899 (Gulf of Manar, 597 fathoms).

— Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, p. 257, 1906 (part).
388 (reference),

1594

Coelorhynchus parallelus Goode
and Bean, Oceanic Ichth., p. 397,
1895 (copied). — Garman, Mem.

Mus. Comp. Zool., vol. 24, p. 397,
1899 (reference). — Jordan and Snyder,

Annot. Zool. Japon., vol. 3, p. 120, 1901
(off southern Japan). — Jordan and

Gilbert) Jordan and Starbuck, Bull. U. S.
Fish Comm., vol. 22, p. 618, fig., 1902
(1904) (Misaki). — Franz, Abhandl.

Bayer. Akad. Wiss., vol. 4, Suppl. band
1, p. 26, 1910 (Aburatsubo). — Jordan,

Tanaka, Snyder, Journ. College Sci. Tokyo,
vol. 33, pt. 1, p. 418, 1913 (compiled). —

Weber, Siboga Exped., vol. 57, Fische,
p. 163, pl. 4, fig. 3, 1913 (Savu Sea;
Halmahera Sea; Ceram Sea; Flores
Sea; 567 to 959 meters). — Gilbert

and Hubbs, Proc. U. S. Nat. Mus., vol. 51,

1595-

p. (145) 181, 1916 (Eastern Sea, 369 to
434 fathoms); Bull. U. S. Nat. Mus.,
no. 100, vol. 1, p. (515) 515 (east
coast of Luzon, 383 fathoms). — Weber

and Beaufort, Fishes Indo Austral.
Archip., vol. 5, p. 53, fig. 11 (head),
1929 (Weber's materials).

Coelorhynchus hermadecus (Jordan and
Gilbert) ~~Gilbert~~ Jordan and Starke,
Bull. U. S. Fish Comm., vol. 22, p. 618,
1902 (1904) (on Günther, 1887, pl. 29,
fig. A). — Waite, Records Canterbury

Mus., vol. 1, no. 1, p. April 25, 1907
(reference). — Gilbert and Hubbs, Proc.

U. S. Nat. Mus., vol. 51, p. 145, 1916
(reference); Bull. U. S. Nat. Mus., no.
100, vol. 1, p. 431, 1920 (diagnosis in
key).

1596

Coelorhynchus patagoniae Gilbert and
Thompson

Coelorhynchus patagoniae Gilbert and
Thompson, Proc. U. S. Nat. Mus., vol.
50, p. 475, pl. 6, fig. 2, 1916 (type
locality: between Wellington Island
and the mainland on the west coast
of Patagonia, in 94 fathoms). —

Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
vol. 51, p. 144, 1916 (reference); Bull.
U. S. Nat. Mus., no. 100, vol. 1, p. 426,
1920 (diagnosis in key).

Depth $6\frac{1}{2}$; head $4\frac{1}{3}$, width $1\frac{3}{5}$.
Snout to eye 3 in head; eye 3, $1\frac{1}{8}$
in snout, $1\frac{1}{3}$ times interorbital;
orbit $1\frac{2}{3}$ in head, $1\frac{1}{5}$ times snout,
 $1\frac{2}{5}$ times interorbital; maxillary
reaches $\frac{1}{2}$ in eye, length from front
end $3\frac{3}{4}$ in head; mandibular
barbel?; teeth minute, villiform,
in bands in jaws, of 4 or 5
irregular rows; interorbital $5\frac{1}{4}$

in head, low, concave medially.
 Gill rakers $0 + 7$ low spinous
 tubercles, $1/4$ of gill filaments,
 which $2\frac{3}{4}$ in eye.

Scales $42?$ (pockets) to end
 of broken tail; 4 above, $8?$ below,
 8 predorsal forward to occiput.
 Scales with 4 to 6 radiating
 apical spinuliferous ridges,
 last spinules projecting beyond
 hind scale edge; circuli
 moderate, complete.

D. II, $9 - 63$, second simple
 ray slender, entire, $1\frac{4}{5}?$ in
 head; interdorsal space $7\frac{1}{2}$;
 A. 71 , fin height $6\frac{1}{4}?$; pectoral
 rays I, 16 , fin 2 in head; ventral
 rays I, 6 , fin $2\frac{1}{5}$.

Light brown, head paler to

11746, 12053, 13855. Port Banalacan,
Marinduque. February 23, 1909. Length
195 to 207 mm.

10497, 10725, 11017. Port Maricaban.
July 21, 1908. Length 163 to 216 mm.

16531. Port Natalvi, Luzon. November 22,
1908. Length 157 mm.

13391, 17161. Port Natalvi. November 23,
1908. Length 151 to 156 mm.

1 example. Port Palapag. June 2, 1909.
Length 41 mm.

12711. Reef south lagoon, Taminiao Island.
February 26, 1908. Length 157 mm.

10794, 10796, 14964. Refugio Island,
Pasacao, Luzon. March 9, 1909. Length 108
to 213 mm.

(2)

(of)

(e)

whitish. Iris grayish. Inside
mouth and gill openings dusky.
Breast, belly and branchial
region neutral gray. Fins pale
brown.

Off Patagonia.

U. S. N. M., No. 76862. Lat. $38^{\circ}8'S$, long.
 $75^{\circ}53'E$. In fathoms.

Albatross Collection (p. 2784).

Length 125 mm (tail now broken
so length only 96 mm). Type.

4669, 4670. Limbongan Cove, Luzon.

January 14, 1908. Length 202 to 220 mm.

~~16764~~. Rode Bay, Destarado Island.

March 13, 1909. Length 243 mm.

14989, 15019. Makesi Island, Palawan.

April 5, 1909. Length 124 to 143 mm.

5227, 5228. Malabon market, August 8, 1908. Length 177 to 212 mm.

14240. Mariveles wharf, Luzon. January 30, 1909. Length 107 mm.

16502 to 16504. Masamat Bay, Inimalasag Island. June 12, 1909. Length 69 to 78 mm.

17318, 17319. Near Palag Bay, Luzon. June 16, 1909. Length 180 to 189 mm.

13433. Opol, Mindanao. August 4, 1909. Length 178 mm.

1 example. Pagapas Bay, Luzon. February 20, 1909. Length 152 mm.

1 example. Pandanon Island. March 23, 1909. Length ?

1599

Coelorhynchus productus Gilbert and
Hubbs

Coelorhynchus productus Gilbert and
Hubbs, Proc. U. S. Nat. Mus., vol. 51,
p. ⁽¹⁴⁵⁾175, pl. 9, fig. 1, 1916 (type locality:
Suruga Gulf, Japan, in 197 to 297
fathoms); Bull. U. S. Nat. Mus., no. 100,
vol. 1, p. 430, 1920 (diagnosis in key).

Depth $7\frac{4}{5}$ to 10; head $3\frac{7}{8}$ to $4\frac{1}{4}$,
width 2 to $2\frac{1}{4}$. Snout to eye $1\frac{9}{10}$ to
 $2\frac{1}{5}$ in head; eye 5 to $5\frac{4}{5}$, $2\frac{1}{6}$ to 3
in snout, 1 to $1\frac{1}{5}$ in interorbital;
orbit $3\frac{1}{2}$ to $3\frac{3}{4}$ in head, $1\frac{2}{5}$ to $1\frac{3}{5}$
in snout, $1\frac{1}{6}$ to $1\frac{1}{5}$ times interorbital;
maxillary reaches $\frac{1}{2}$ to $\frac{2}{3}$ in eye,
length from front end $4\frac{1}{3}$ to 5 in
head; mandibular barbel $2\frac{1}{4}$ to $2\frac{3}{4}$
in eye; teeth in villiform bands in
jaws, of 5 or 6 irregular rows;
interorbital $4\frac{2}{3}$ to $4\frac{4}{5}$ in head,
low, level. Gill rakers 0 + 6 low
spinescent tubercles $\frac{1}{4}$ of gill filaments,
which $2\frac{1}{4}$ in eye.

Scales 106 in lateral line; 5 above, 12 below, 7 predorsal forward to occiput. Scales with 3 to 5 radiating apical spinuliferous ridges, last spinules extending little beyond hind scale edge; circuli moderate, complete.

D. II, 8 or II, 9-100?, second simple ray slender, entire, $1\frac{9}{10}$ to 2 in head; interdorsal space $4\frac{1}{10}$ to $4\frac{1}{5}$; A. 110?, fin height 5 to $5\frac{1}{4}$; pectoral rays I, 17 or I, 18, fin $2\frac{1}{3}$ to $3\frac{1}{4}$; ventral rays I, 6, fin $2\frac{1}{3}$ to $3\frac{1}{8}$.

Rather dark brown, muzzle and under surface of head paler. Iris grayish. Inside mouth and gill opening blackish. Fins brown,

1601

first dorsal and ventrals darker.
Japan.

U.S.N.M., No. 76865.

In 197 to 297 fathoms.
Albatross Collection (5059).
Length 306 mm. Type.
U.S.N.M., No. 76872.

Albatross Collection (5066).
Length 220 mm. Also small example
98 mm.

U. S. N. M., No. 76873.

Albatross Collection (D. 5059).

Length ~~220~~₉₀ to 247 mm. 4 examples.

head
feet
hairs

head

orbital

pale

belly white, slightly washed with
pink; dusky stripe from below
pectoral base to anal; anal;
bluish V before eye obscure;
slate blue blotch vertically on
shoulder.

1603

Coelorhynchus platyrhynchus Smith
and Radcliffe

Coelorhynchus platyrhynchus Smith
and Radcliffe, Proc. U. S. Nat. Mus.,
vol. 43, p. 133, pl. 30, fig. 1, 1912
text fig. 9,

(type locality: Sipadan Island, Borneo,
in 476 fathoms). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916
(reference); Bull. U. S. Nat. Mus., no. 100,
vol. 1, p. (429) 484, fig. 16, 1920 (east
coast of Luzon; vicinity of Sibuko Bay,
Borneo; Gulf of Boni, Celebes, in 365
to 510 fathoms). — Weber and Beaufort,

Fishes Indo Austral. Archip., vol. 5, p. 47,
1929 (compiled).

Depth $7?$ to $7\frac{2}{3}$; head $3\frac{3}{5}?$ to $3\frac{7}{8}$, width $1\frac{4}{5}$ to $2\frac{1}{10}$. Snout to eye $2\frac{1}{4}$ in head; eye $5\frac{2}{5}$ to $6\frac{1}{8}$, $2\frac{1}{3}$ to $2\frac{7}{8}$ in snout, $1\frac{1}{5}$ to $1\frac{3}{5}$ in interorbital; orbit $3\frac{3}{4}$ to $3\frac{4}{5}$ in head, $1\frac{1}{3}$ to $1\frac{2}{5}$ in snout, $\frac{1}{6}$ to $\frac{1}{5}$ greater than interorbital; maxillary reaches $\frac{1}{2}$ in eye to opposite hind eye edge, length from front end $3\frac{4}{5}$ to $4\frac{1}{3}$ in head; mandibular barbel $1\frac{1}{4}$ to $2\frac{3}{4}$ in eye; teeth in villiform bands in jaws, of 8 or 9 irregular rows; interorbital $4\frac{3}{5}$ to 5 in head, low and slightly depressed anteriorly. Gill rakers $0+7$ low spinescent tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $\frac{1}{2}$ of eye.

56219 U.S.N.M. Baron. Bureau
of Fisheries (3482). Length 120 mm.

59002 U.S.N.M. Baron. Bureau of
Fisheries (3474, 3985). Length 138 to 194 mm.
2 examples.

72680 U.S.N.M. Java. Bigant and
Dr. Palmer. Length 175 mm.

75493 U.S.N.M. Kafa, Okinawa, Riu Kiu.
Ulubross Collection 1906. Length 183 mm.

The following are perhaps variations of
Casio caeruleus, but the dark band
in each caudal lobe constantly narrower,
also a single dark line separates brown
of back from blue of flanks.

84218 U.S.N.M. Philippines. Dr. F. Baker.
Length 206 mm. Two dark bands along back.
As Casio pisang.

15459 to 15461. Bolinao Bay, Luzon.
May 10, 1909. Length 78 to 80 mm.

9030. Bongao, Sulu Archipelago. February
24, 1908. Length 193 mm.

Scales 99 in lateral line; 5 above, 13 below, 12 predorsal forward to occiput. Scales with 5 to 7 radiating apical spinuliferous ridges, last spinules extended well beyond scale edge; circuli fine, complete.

D. II, 9 - 88, second simple ray entire, slender, $1\frac{4}{5}$ in head; interdorsal space $3\frac{4}{5}$ to $4\frac{1}{4}$; A. 88, fin height 5 to $5\frac{1}{2}$; pectoral rays I, 17, length $2\frac{1}{10}$ to $2\frac{1}{3}$ in head; ventral rays I, 6, fin 2 to $2\frac{3}{5}$.

Dark brown, nearly uniform. Iris grayish. Inside mouth and gill opening dark to blackish. Fins brownish, ventral and anal darkest.

9029. Bongao anchorage, Tawi Tawi Group. February 24, 1908. Length 161 mm.
~~12454, 12456, 15576, 15578.~~ Bugsuk Island, Balabac. January 5, 1909. Length 99 to 189 mm.

7097, ~~15176, 21268.~~ Busin Harbor, Burias Island, March 8, 1909. Length 187 mm.

15176. Busin Harbor. March 7, 1909. Length 178 mm.

21268. Busin Harbor. April 22, 1909. Length 132 mm.

15820, 22276, 22277. Butuanan Island. June 13, 1909. Length 70 to 90 mm. 10 examples.

15057, 15058. Canmahala Bay, Ragay Gulf, Luzon. March 11, 1909. Length 124 to 207 mm.

12734. Capulaan Bay, Pagbilao Island. February 24, 1909. Length 130 mm.

U.S.N.M., No. 72946. Sipadan
Island (M.) S. 89° W., 12 miles (lat.
 $4^{\circ} 7' 00''$ N., long. $118^{\circ} 49' 54''$ E.),
Sibuko Bay, Borneo and
vicinity. In 476 fathoms.
Albatross Collection (D. 5585). Type.
September 28, 1909. Length 380 mm.

U.S.N.M., No. 78236. Albatross
Collection (D. 5586). Sipadan
Island (M.) West, 9.4 miles (lat. 4°
 $6' 50''$ N., long. $118^{\circ} 47' 20''$ E.), Sibuko
Bay. In 347 fathoms. September 28,
1909. Length 153 mm. Albatross
Collection (D. 5587). Sipadan
Island (W.) S. 12° E., 3.8 miles (lat.
 $4^{\circ} 10' 25''$ N., long. $118^{\circ} 37' 12''$ E.), Sibuko
Bay. In 415 fathoms. September 28,

and

to

ins of
middle o
/3 diam
n, caud
ky purpl

1909. Length 302 mm.

1607

dark,
dusky, to blotched
from above eye
tip of extended
and broadens to about
lateral and narrows again
continues past middle of body; snout
million, somewhat hyaline posterior
shade as body, tips red
als ~~same~~ same with
very.

1608

Caelorhynchus quincunciatus Gilbert and
Hubbs

Caelorhynchus quincunciatus Gilbert
and Hubbs, Bull. U.S. Nat. Mus.,
no. 100, vol. 1, p. 438, fig. 7, 1920 (type
locality: between Samar and Masbate;
off eastern Mindoro; between Cebu and
Bohol; off south east Luzon; 108 to
162 fathoms).

Depth $7\frac{1}{5}$; head $3\frac{1}{2}$, width $2\frac{7}{8}$.
Snout to eye $2\frac{1}{4}$ in head; eye $5\frac{1}{2}$,
 $2\frac{1}{2}$ in snout as measured to eye,
 $1\frac{2}{5}$ in interorbital; orbit $4\frac{7}{8}$ in
head, 2 in snout as measured to
its own front edge, equals interorbital;
maxillary reaches $\frac{4}{5}$ in eye, length
from front end $3\frac{1}{10}$ in head;
mandibular barbel $1\frac{1}{4}$ in eye;
teeth in villiform bands in jaws,
of 5 or 6 irregular rows; interorbital
 $4\frac{1}{4}$ in head, low, but slightly convex.
Gill rakers 0+5, short spinescent
tubercles on second arch.

1609

Scales 80 (pockets) in lateral line to pseudocaudal; 5? above, 12? below, 11? predorsal forward to occiput which about first third in space between hind eye edge and dorsal origin. Scales with 6 or 7 radiating series of wide set small spinules, none extended behind hind scale edge; circuli moderate, complete.

D. II, 9 - 65, first branched ray (broken) estimated about 2 in head; interdorsal space $4\frac{1}{10}$; A. 64, fin height 5?; pseudocaudal $7\frac{1}{2}$; pectoral rays I, 15, fin $2\frac{1}{4}$ in head; ventral rays I, 6, fin $3\frac{4}{5}$.

Pale brown, with more or less silvery white luster on sides, Branchiostegal region, breast,

12712. Atuluyan Bay, Luzon.

June 18, 1909. Length 143 mm.

4 examples. Guinayan Island.

June 4, 1909. Length 62 to 66 mm.

16371. Maculabo Island, Luzon.

June 14, 1909. Length 175 mm.

19294. Malapascua Island, north of Cebu.

March 16, 1909. Length 157 mm.

^{16501,}
16505. Masamat Bay, Dinagat Island.

June 12, 1909. Length ^{52 to} 75 mm.

6936, 6938. Port Galera, Mindoro. June 9, 1908. Length 198 to 200 mm.

11366. Port San Pio Quinto, Camiguin Island. November 11, 1908. Length 199 mm.

10792¹⁰¹⁹³, 10795, 10797¹¹²⁶⁵, 14963 [1269]. Refugio Island, Pasacao, Ragay Gulf, Luzon.

March 9, 1909. Length 205 to 230 mm.

1610

chest and belly tinted with somewhat deep brownish. Iris whitish. Inside mouth white. Inside gill opening dark to dusky. Fins all pale brown. Ventrals sprinkled with some dark dots.

Philippines.

U. S. N. M., No. 78213. Tubig Point, N. 49° E., 5 miles (lat. 12° 12' 35" N., long. 124° 2' 48" E.), between Vamar and Masbate. In 135 fathoms. March 13, 1909. Albatross Collection (D. 5392). Length 233 mm. Type.

Caesio erythrogaster (Kuhl and Van Hasselt)
Cuvier, Hist. Nat. Poiss., vol. 6, 1830, p.
 442, pl. 166. Java. — Schmeltz, Cat. Mus.
Godeffroy, vol. 1, 1864, p. 8 (Indian Ocean).
 — Kner, Reise Novara, Fische, 1865, p. 64
 (Java; Singapore). — Bleeker, Atlas
Ichth. Ind. Néerl., vol. 7, 1873-76, pl.
 (34) 312, fig. 3; vol. 8, 1876⁷⁷, p. 36 (Sumatra,
 Lias, Batu, Singapore, Bintang, Banka,
 Quizend Islands, Java, Bawean, Celebes,
 Halmahera, Amboina, Ceram). — Martens,
Preuss. Exped. Ost Asien, 1876, p. 387
 (Singapore). — Macleay, Proc. Linn. Soc. New
South Wales, vol. 7, 1882, p. 240 (New Guinea).
 — Seale and Bean, Proc. U. S. Nat. Mus., vol.
 33, 1907, p. 243 (Zamboanga). — Weber,
Siboga Exped., vol. 57, Fische, 1913, p. 286
 (Saleyer).

Caesio erythropterus Bleeker, Natuurk. Tijds.
Nederl. Indië, vol. 18, 1859, p. 365 (Banka)
 (error).

1611

Coelorhynchus quadricristatus (Alcock)

Macrurus quadricristatus Alcock,
Ann. Mag. Nat. Hist., ser. 6, vol. 8,
p. 119, 1891 (type locality: lat. $11^{\circ}31'40''$ N., long. $92^{\circ}46'40''$ E., 188 to 220
fathoms; lat. $11^{\circ}25'5''$ N., long. $92^{\circ}47'6''$, 405 fathoms, Indian Ocean);
Illustrat. Zool. Investigator, pt. 1,
pl. 3, fig. 1, 1892.

Macrurus (Coelorhynchus) quadricristatus
Alcock, Cat. Deep Sea Fishes Indian
Mus., p. 106, 1899 (Andaman Sea, 185
to 405 fathoms).

Coelorhynchus quadricristatus Goode
and Bean, Oceanic Ichth., p. 397, 1895
(copied). — Garman, Mem. Mus. Comp.

Zool., vol. 24, p. 397, 1899 (reference). —
Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
vol. 51, p. 145, 1916 (reference); Bull. U.
S. Nat. Mus., no. 100, vol. 1, p. 431, 1920
(diagnosis in key).

1612

Coelorhynchus radcliffei Gilbert and Hubbs

Coelorhynchus radcliffei Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 498,
figs. 21 to 24, 1920 (type locality: off
eastern Mindoro; between Marinduque
and Luzon; off south east Mindoro;
near Marinduque; off northern
Mindanao; between Cebu and Siquijor;
between Negros and Siquijor; between
Gillolo and Makyan; between Gillolo
and Kayoa; 190 to 310 fathoms). —

Weber and Beaufort, Fishes Indo Austral.
Archip., vol. 5, p. 50, 1929 (compiled).

Coelorhynchus commutabilis form beta
Smith and Radcliffe, Proc. U. S. Nat.
Mus., vol. 43, p. 131, text figs. 4 to 5,
1912 (off Mindanao, 226 fathoms).

Depth 10; head $3\frac{3}{4}$, width 3.

Snout to eye $2\frac{1}{8}$ in head; eye $4\frac{1}{3}$, 2 in snout, $1\frac{1}{6}$ times interorbital; orbit 4, $1\frac{2}{3}$ in snout, $1\frac{1}{4}$ times interorbital; maxillary reaches $\frac{3}{4}$ in eye, length from front end $4\frac{7}{8}$ in head; mandibular barbel $4\frac{1}{4}$ in eye; teeth villiform, minute, in jaws; interorbital $5\frac{1}{5}$ in head, low in front, depressed medially. Gill rakers 0 + 6 low spinescent tubercles, $\frac{1}{4}$ of gill rakers, which $\frac{1}{3}$ of orbit.

Scales about 100 in lateral line; 6 above, 14 below, 7 forward on predorsal to occiput. Scales with 5 nearly parallel radiating spinuliferous beels, last spinules not extended beyond hind scale edge; circuli moderate,

Caesio cuning (Bloch)

- Sparus cuning Bloch, Nat. Hist. Piss., vol. 5, 1791, p. 31, pl. 263, fig. 1.
East Indies. — Walbaum, Arted. Pisc., vol. 3, 1792, p. 295 (on Bloch). — Forster, Fauna Indica, 1795, p. 15. — Lacépède, Hist. Nat. Poiss., vol. 4, 1802, pp. 36, 113 (East Indies).
Cichla cuning Schneider, Syst. Ichth. Bloch, 1801, p. 336 (East Indies).
Caesio cuning Cuvier, Hist. Nat. Poiss., vol. 6, 1831, p. 444 (on Bloch). — Day, Fishes of India, pt. 1, 1875, p. 95; Fauna British India, Fishes, vol. 1, 1889, p. 534. — Evermann and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 83 (Bacon). — Fowler, Mem. Bishop Mus., vol. 10, 1928, p. 203 (New Guinea).

complete.

D. II, 8 — (second fin not developed), rays of first fin broken, front ones ³? in head; A. 70?, rudimentary or absent on last fifth of tail; pectoral rays I, 16, ventral I, 6, fin $2\frac{2}{3}$ in head.

Pale brown, with silvery reflections on lower sides. Head largely pale to whitish. Iris gray. Inside mouth whitish. Inside gill opening dusky. Belly dark neutral gray. Fins pale. East Indies, Philippines.

Odontonectes erythrogaster Günther,
 Cat. Fishes Brit. Mus., vol. 1, 1859, p. 265
 (Amboina; Molucca Sea). — Schmeltz,
 Cat. Mus. Godeffroy, no. 4, 1869, p. 13
 (Viti Levu; Samoa). — Károli, Termésez.
 Füzetek, Budapest, vol. 5, 1881, p. 153
 (Singapore). — Boulenger, Proc. Zool.
 Soc. London, 1887, p. 656 (Muscat).

Caesio erythro^{hi}oculus Fowler, Journ. Acad.
 Nat. Sci. Philadelphia, series 2, vol. 12,
 1904, p. 525, pl. 19, upper fig. Padang,
 Sumatra.

Caesio lunaris (not Cuvier) Fowler, Proc.
 Acad. Nat. Sci. Philadelphia, 1927, p. 278
 (Bacon specimen).

1615-

U.S.N.W., no. 78224. Apo Island
(C.), S. 46° W., 8.7 miles (lat. $9^{\circ}11'$
 $00''$ N., long. $123^{\circ}23'00''$ E.), between
Negros and Siquijor. In 254
fathoms. August 19, 1909.
Albatross Collection (D. 5537).
Length 136 mm.

Dont nectes erythrogaster Günther,
Cat. Fishes Brit. Mus., vol. 1, 1859, p.
265 (Amboina; Molucca Sea). —
Schmeltz, Cat. Mus. Godeffroy, no. 4,
1869, p. 13 (Viti Levu; Samoa). — Károli,
Termész. Füzetek, Budapest, vol. 5,
1881, p. 153 (Singapore). — Boulenger,
Proc. Zool. Soc. London, 1887, p. 656 (Muscot).

Depth $2\frac{1}{3}$ to $2\frac{4}{5}$; head 3 to $3\frac{2}{5}$,
width $1\frac{7}{8}$ to $2\frac{1}{4}$. Snout $3\frac{3}{4}$ to $4\frac{2}{5}$ in
head from snout tip; eye 3 to $4\frac{2}{3}$,
greater than snout in young to $1\frac{1}{4}$
to $1\frac{1}{4}$ with age, little greater than
interorbital in young to $1\frac{2}{5}$ to $1\frac{1}{2}$
with age; maxillary reaches front eye
edge or $\frac{1}{4}$ in eye, expansion $1\frac{3}{4}$ to
 $2\frac{1}{3}$ in eye, length $2\frac{2}{3}$ to $3\frac{1}{8}$ in
head; teeth villiform, in bands in
jaw, on vomer and palatines, also
pair of small protruding wide set

1616

Coelorhynchus scaphopsis (Gilbert)

Macrurus (Coelorhynchus) scaphopsis
Gilbert, Proc. U. S. Nat. Mus., vol. 13,
p. 115, 1890 (1891) (type locality:
off southern California, in 145 fathoms).

— Brauer, Deutsch. Tiefsee Exped.
Valdivia, vol. 15, p. 388, 1906 (reference).

Coelorhynchus scaphopsis Goode and
Bean, Oceanic Ichth., p. 397, 1895
(copied). — Jordan and Evermann,
Bull. U. S. Nat. Mus., no. 47, pt. 3,
p. 2590, 1898 (copied). — Garman,

New. Mus. Comp. Zool., vol. 24, p. 397,
1899 (reference). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 144, 1916
(reference); Bull. U. S. Nat. Mus., no. 100,
vol. 1, p. 426, 1920 (diagnosis in key).

Depth $6\frac{1}{8}$; head 4, width $1\frac{9}{10}$.
Snout to eye $2\frac{4}{5}$ in head; eye
 $4\frac{1}{3}$, $1\frac{1}{2}$ in snout, 1 in interorbital;
orbit $3\frac{1}{8}$ in head, 1 in snout, $1\frac{1}{3}$
times interorbital; maxillary
reaches $\frac{3}{5}$ in eye, length from
front end 3 in head; mandibular
barbel $2\frac{1}{3}$ in eye; teeth in
villiform bands in jaws, of 5
or 6 irregular rows; interorbital
 $4\frac{2}{5}$ in head, low and nearly
level. Gill rakers 0+7, low
spinescent tubercles on second
arch, $\frac{1}{4}$ of gill filaments, which
 $\frac{1}{2}$ of eye.

Scales about 105 in lateral
line; 6 above, 14 below, 10 predorsal
forward to occiput, which about
first third in space between
hind eye edge and first dorsal.

canines in each jaw anteriorly; on each side of snout above premaxillary ^{narrow band of villiform teeth across vomer and small patch on each palatopharyngeal} bony denticle like projection; interorbital $3\frac{1}{4}$ to $3\frac{2}{5}$, convexly elevated; preopercle flange entire, with parallel venules all along margin. Gill rakers ^{11 to} $13 + 24$ ^{to 27}, lanceolate, $7\frac{1}{5}$ of gill filaments ^{to 13} $1\frac{3}{5}$ in eye.

Scales $4\frac{5}{8}$ to 50 in lateral line to caudal base and $\frac{3}{4}$ to 7 more on latter; ^{4 or 8} scales above lateral line, $1\frac{3}{4}$ ^{to} $15\frac{7}{8}$ below, ^{23 to} 27 predorsal forward above hind nostril of which $1\frac{6}{8}$ ^{to} 20 to occiput, $4\frac{5}{8}$ rows on cheek. Suprascapula entire. Scales with ^{3 to 22} $1\frac{1}{4}$ basal radiating striae; apical denticles ^{72 to} 154 , minute, feeble, each with ^{13 to} 20 transverse series of basal elements; circuli very fine.

D. $\underline{\underline{X}}$, $15, \underline{\underline{I}}$, third spine 2 to $2\frac{1}{2}$ in total head length, first ray $2\frac{7}{8}$ to $3\frac{1}{4}$;

origin. Scales with 9 or 10 parallel series of apical spinules, though only 3 or 4 complete and with last spinules projecting beyond hind scale edge; circuli fine, complete.

D. II, 8 — 85, second simple ray $1\frac{3}{5}$ in head, ends in filament; interdorsal space $2\frac{4}{5}$; A. 95, fin height $3\frac{4}{5}$; pectoral rays I, 16, fin 2 in head; ventral rays I, 6, fin 3.

Pale brown generally. Head pale to whitish, with silvery white tints, grayish on opercles and branchiostegals. Inside mouth white. Inside gill opening blackish brown. Iris silvery white. Fins all light brown, ventrals dusky.

A. III, 11, I, once abnormally 6, second spine $2\frac{1}{2}$ to $3\frac{2}{5}$, first ray $2\frac{4}{5}$ to $3\frac{2}{5}$, caudal $2\frac{3}{4}$ to $3\frac{1}{4}$ in combined head and body to caudal base, widely forked, with slender pointed lobes; pectoral $2\frac{2}{3}$ to 3; least depth of caudal peduncle $2\frac{3}{4}$ to $3\frac{1}{4}$ in total head length; ~~ventral~~ ventral $1\frac{2}{5}$ to $1\frac{4}{5}$.

Back drab brown, with lustrous lilac and purplish reflections. Lower sides and below whitish. Iris brownish. Dorsals and caudal dull brown, other fins lighter or whitish.

India, Singapore, East Indies, Philippines, Queensland, Polynesia. Bleeker's figure, though good in contour, squamation and other details, gives a poor if not misleading idea of the dentition. It does not show the outwardly flaring canines in the front of each

Off California.

1619

U.S.N.M., No. 44272. Lat. $29^{\circ}19'N$,
Long. $112^{\circ}50'W$.

March 24, 1889.

Albatross Collection (63015).

Length 251 mm. Type.

jaw. In the young, however, they are more inconspicuous and erect, though easily evident to touch in the closed mouth. The young also have a dusky brown axillary blotch which is only partially exposed as a small inconspicuous dark spot at the pectoral origin. Bloch's figure of Sparus cuning is poor and is evidently rightly identified with Caesio erythrogaster Cuvier by Bleeker. The nominal Caesio erythrochilus is synonymous. Specimens representing it are without any dark markings on the fins, except the whole upper border of both dorsals dusky. The lower preorbital rim is very narrow and has the maxillary approaching very close to the eye. Preservation seems to account for the presence of the dark streaks on the cheeks. Sometimes a

1620

Coelorhynchus seyradiatus Gilbert and Hubbs

Coelorhynchus seyradiatus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
(429) 458, fig. 11, 1920 (type locality:
vicinity of Jolo; between Jolo and
Tawi Tawi; in 243 to 318 fathoms).

— Weber and Beaufort, Fishes Indo
 Austral. Archip., vol. 5, p. 43, 1929
(compiled).

Depth $7\frac{1}{8}$; head $4\frac{1}{8}$, width 2.
Snout to eye $2\frac{2}{5}$ in head; eye $4\frac{1}{5}$,
 $1\frac{4}{5}$ in snout, 1 in interorbital;
orbit $3\frac{3}{5}$ in head, $1\frac{1}{3}$ in snout,
 $1\frac{1}{4}$ times interorbital; maxillary
reaches $\frac{1}{2}$ in eye, length from front
end $3\frac{1}{2}$ in head; mandibular
barbel $2\frac{1}{5}$ in eye; interorbital
 $4\frac{1}{2}$ in head, low, level forward.
Gill rakers 0+6, low spinescent
tubercles on second arch, $\frac{1}{4}$ of
gill filaments, which $\frac{1}{2}$ of eye.

Scales 75 in lateral line to pseudocaudal; 6 above, 9 below, 9 predorsal forward to occiput. Scales with 8 to 12 slightly radiating apical beels, last spinules extending little beyond hind scale edge; Circuli moderate, complete.

D. IV, 8 — 64, second simple ray slender and extended in filament until nearly long as head; interdorsal space $3\frac{1}{5}$ in head; A. 70, fin height $5\frac{1}{5}$; pseudocaudal very small; pectoral rays I, 15, fin $1\frac{9}{10}$ in head; anal rays I, 5, fin 2.

Brown, paler below, especially lower surface of head. Large dark brown blotch above pectoral base, though no traces

8008, 8010, 10773, 11743, 12052, Port Banalacan, Marinduque. February 23, 1909. Length 207 to 278 mm.

8188. Port Busin, Burias Island. March 8, 1909. Length 305 mm.

11256, 14709. Port Calton, Busuanga Island. December 15, 1908. Length 182 to 220 mm.

18712. Port Dupon, Leyte. March 17, 1909. Length 232 mm.

6383. Port Jamelo, Luzon. July 13, 1908. Length 235 mm.

16527, 20794. Port Matalvi, Malapascua Island. November 22, 1908. Length 128 to 135 mm.

7263, 17158 to 17160. Port Matalvi. November 23, 1908. Length 113 to 248 mm.

3 examples [423]. Port Usan, west of Pinas Island. December 17, 1908. Length 66 to 99 mm.

of others at front of near middle of base of second dorsal fin. Inside mouth and gill opening dark. Iris grayish. Fins all brownish, first dorsal and ventral bases dark or dusky. Belly dark gray.

Philippines. Very closely related to Coelorhynchus notatus Smith and Radcliffe and Coelorhynchus triocellatus Gilbert and Hubbs, differing only in slight details, chiefly in color or with a single dark blotch above each pectoral base.

6136. Puerta Princesa, Palawan.

April 5, 1909. Length 180 mm.

8787. Linaatasay Island. June 21, 1909.
Length 295 mm.

8989, 13404, 13405. Rapurapur Island.
June 22, 1909. Length 128 to 314 mm.

8216, 8217. Refugio Island, Pasacao,
Ragay Gulf, Luzon. March 9, 1907.
Length 212 to 255 mm. 4 examples.

5278, 5290. Romblon Harbor. March 25,
1908. Length 190 to 218 mm.

ian. The head bordered with
head with three stripes of slaty purple: 1s
across interorbital region; another
across cheek from the upper corner
with dusky; centrally with a rosy wash;
red with white, yellowish centrally;
lilion, the front white, and membranes
s dusky geranium, hyaline membranes, upper
exish; iris with red; tip of nose and chin
and opercle behind eye washed with

U. S. N. M., No. 78218. Int.
Bromedario (Tawi Tawi), S. 16°
W., 19.2 miles (lat. $5^{\circ}28'30''$ N.,
long. $120^{\circ}02'27''$ E.), north of
Tawi Tawi. In 315 fathoms.
September 23, 1909. (Albatross
Collection (D. 5575). Length 199
mm to end of broken pseudocaudal)

scale rows.

...on 11.
...distally. ...
...ish brown. Anal, ventral, ax
lvery. All of lower parts
not in

terminally

1624

Coelorhynchus smithi Gilbert and Hubbs

Coelorhynchus smithi Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
(430) 493, fig. 20 (type locality: off
eastern Mindoro; west of Butol; Cagayan
Island; Sulu Sea; north of Mindanao;
between Cebu and Siquijor; between
Negros and Siquijor; near Sibubo
Bay, Borneo; between Gilolo and
Makyan; 220 to 340 fathoms). —

Weber and Beaufort, Fishes Indo Austral.
Archip., vol. 5, p. 49, 1929 (compiled).

Coelorhynchus commutabilis Smith and
Radcliffe, Proc. U. S. Nat. Mus., vol. 43,
p. 128, 1912 (part).

Depth $6\frac{4}{5}$; head $3\frac{1}{3}$, width $2\frac{1}{2}$. Snout to eye 2 in head, ends in slender acuminate spine; eye $4\frac{3}{5}$, $2\frac{1}{5}$ in snout, $1\frac{1}{8}$ in interorbital; orbit $3\frac{1}{2}$ in head, $1\frac{2}{3}$ in snout, $1\frac{1}{8}$ times interorbital; maxillary reaches $\frac{4}{5}$ in eye, length from front end 4 in head; mandibular barbel $2\frac{1}{2}$ in eye; teeth in villiform bands in jaws, of 5 or 6 irregular rows; interorbital $4\frac{1}{5}$ in head, low and level or only slightly concave anteriorly. Gill rakers 0+6 spinescent tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $2\frac{1}{2}$ in eye.

Scales from above gill opening 98 in lateral line; 5 above, 13 below, 11 predorsal forward to occiput. Scales with 4 to 6 radiating apical

175-92, 17593. Van Heugden Island,
Labaro Bay. June 4, 1909. Length 122 to
194 mm.

6555, 6556, 9123. Van Heugden, Loyte.
July 29, 1909. Length 64 to 247 mm.

13 examples.

11715 to 11717, 14178. Van Heugden Island,
Mauritius. April 24, 1908. Length 102
to 134 mm.

21201 to 21203. Wangsa Bay. May 7, 1908.
Length 94 to 102 mm.

5221 [121], 5222 [122]. Near Island market.
February 17, 1908. Length 210 to 212 mm.
9404, 9405, 16687, 20020. Wangsa,

Mindanao. May 8, 1908. Length 107 to 126 mm.
9347, 9355. Van Heugden. December 14, 1908.

Length 288 to 318 mm.

94935. Wangsa Bay, Loyte.
16096, 16390 to 16392. Wangsa Bay, Loyte.

Inlet, Labuan. December 25, 1908. Length

53 to 109 mm.

4 examples. Wangsa Bay, near Pakel River mouth. December 25, 1908.
Length 65 to 71 mm.

spinuliferous beels, last spinules extended behind scale edge; circuli moderate, complete.

D. II, 9 — 89?, second simple ray slender, entire, 3 in head; interdorsal space 4; A. 98?, fin height $6\frac{1}{5}$; pectoral rays I, 15, fin $2\frac{1}{2}$ in head; ventral rays I, 6, fin $3\frac{4}{5}$.

Brown, lower surfaces paler. Iris gray. Inside mouth pale. Inside gill opening blackish. Belly tinged gray. Sides of head posteriorly with dark gray tints. Fins brown, more or less darker than body.

East Indies, Philippines.

Genus Pingalo Bleeker

969

Pingalo Bleeker, Nat. Geneesk. Arch.
Nederl. Indie, vol. 2, 1845, p. 521. Type
Pingalo typus Bleeker, monotypic.

Body ovoid, well compressed. Head
rounded, compressed. Upper jaw
moderately protractile. Lower jaw
slightly protruding. Teeth in bands
in jaws and on vomer, none on
palatines. Branchiostegals 6. Scales
70 in lateral series, ctenoid, in
oblique rows on sides of body.
Head with temporal region and
opercles all scaled. Dorsal scaled.
Dorsal spines 11, rays 14 or 15. Anal
spines 3, rays 10 or 11.

U.S.N. No. 78212. Makyan Island
(S.), N. 54° W., 3 miles (lat. $0^{\circ}15'00''$
N., long. $127^{\circ}24'35''$ E.), between
Gillo-Lo and Makyan Islands.
In 298 fathoms. November 28, 1909.
Albatross Collection (D. 5621).
Length 265 mm. Type.

Pinjalo typus Bleeker

Pinjalo typus Bleeker, Nat. Geneesk.
Arch. Nederl. Indië, vol. 2, 1845, p. 521.
Batavia, Java; Atlas Ichth. Ind.
Néerl., vol. 8, 1876-77, p. 33 (Sumatra,
Singapore, Java, Celebes). — Jordan
and Seale, Bull. Bur. Fisher., vol. 26,
1906 (1907), p. 21 (Cavite). — Evermann
and Seale, Bull. Bur. Fisher., vol. 26,
1906 (1907), p. 81 (San Fabian; Buluan).
Caesi pinjalo Bleeker, Verhand. Batav.
Genootsch. (maenoid.), vol. 23, 1850, p.
10. Batavia. — Günther, Cat. Fishes Brit.
Mus., vol. 1, 1859, p. 391 (copied). — Day,
Fishes of India, pt. 1, 1875, p. 94, pl. 44, fig.
4. — Bleeker, Atlas Ichth. Ind. Néerl.,
vol. 7, 1873-76, pl. (14) 292, fig. 3. —
Károli, Termész. Füzetek, Budapest, vol.
5, 1881, p. 155 (Singapore). — Day, Fauna

1628

Coelorhynchus spinifer Gilbert and Hubbs

Coelorhynchus spinifer Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p.
(432) 516, fig. 30, 1920 (type locality: Gulf
of Tomini, Celebes, in 761 fathoms).

— Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 5, p. 54, 1929
(type).

Coelorhynchus macrorhynchus (not Smith
and Radcliffe) Weber, Siboga Exped.,
vol. 57, Fische, p. 162, pl. 4, figs. 2-2a
(type locality: lat. $9^{\circ} 3' 4''$ S., long. 119°
 $56' 7''$, Savu Sea, 959 meters).

Depth $7\frac{2}{5}$; head $3\frac{1}{2}$, width $2\frac{1}{4}$.
Snout to eye 2 in head; eye $5\frac{1}{5}$,
 $2\frac{1}{2}$ in snout, $1\frac{1}{8}$ in interorbital;
orbit 4 in head, $1\frac{9}{10}$ in snout
measured to its own front edge;
maxillary reaches opposite hind
eye edge, length from front end
 $3\frac{2}{5}$ in head; mandibular barbel
3 in eye; teeth in villiform bands,
minute, in jaws; interorbital
 $4\frac{1}{2}$ in head, low, nearly level
anteriorly. Gill rakers $0+5$, low
tubercles on second arch, about
 $\frac{1}{3}$ of great filaments, which $2\frac{1}{2}$
in eye.

Scales 80? in lateral line
(mostly pockets); 5 above, 12
below, 8 predorsal to occiput
which about first third between
hind eye edge and first dorsal

origin. Scales with 3 slightly radiating spiniferous radiating apical beels, of which last spinule of median beel may project behind hind scale edge; circuli moderate, complete.

D. II, 9-83 (rays damaged), fin height $2\frac{2}{3}$? in head; interdorsal $5\frac{1}{3}$; A. 85, fin height $4\frac{1}{2}$?; pectoral rays I, 17, fin $2\frac{9}{10}$ in head; ventral rays I, 6, fin 3.

Pale brown. Head lighter, becomes dark gray on opercles, mouth below and branchiostegal region. Inside mouth dark. Inside gill opening blackish brown. Iris gray. Belly and abdomen dark neutral gray. Fins all pale, ventrals more

or less dusky.
East Indies.

U. S. N. M., No. 78226. Binang
Uuang Island (E.) S. 36° E., 5
miles (lat. $0^{\circ} 04' 00''$ S., long. 121°
 $36' 00''$ E.), Gulf of Tomini,
Celebes. In 761 fathoms. November
18, 1909. Albatross Collection
(D. 5607). Length 178 mm. Type.

1632

Coelorhynchus tenuicauda (Garman)

Macrurus tenuicauda Garman, Mem.
Mus. Comp. Zool., vol. 24, p. 216 (397),
pl. 49, fig. 1, 1899 (type locality:
lat. $7^{\circ} 31' 30''$ N., long. $79^{\circ} 14'$ W., in
458 fathoms, Gulf of Panama).

Macrurus (Macrurus) tenuicauda
Brauer, Deutsch. Tiefsee Exped.
Valdivia, vol. 15, Fische, p. 389, 1906
(reference).

Macrourus tenuicauda Jordan, Ermann,
Clark, Rep. U. S. Comm. Fisher., p. 206,
1930, pt. 2 (reference).

Coelorhynchus tenuicauda Garman,
Mem. Mus. Comp. Zool., vol. 24, p.
397, 1899 (reference).

1633

Coelorhynchus thompsoni Gilbert and Hubbs

Coelorhynchus thompsoni Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p.
(425) 442, fig. 8, 1920 (type locality: Balayan
Bay, off south west Luzon; off
southern Luzon; Verde Island Passage;
off northern Mindanao; 135 to 200
fathoms).

Depth 6 to end of broken caudal;
head $2\frac{2}{3}$, width 3. Snout to eye
 $2\frac{1}{10}$ in head; eye $4\frac{7}{8}$, $2\frac{1}{5}$ in snout
measured to eye, 1 in interorbital;
maxillary reaches $\frac{3}{4}$ of eye, length
from front end 4 in head; mandibular
barbel 4 in eye; teeth simple, conic,
villiform, in 6 or 7 irregular rows;
interorbital $4\frac{1}{5}$ in head, low, nearly
level. Gill rakers 0 + 6 low spines with
tubercles on second arch, $\frac{1}{3}$ of gill
filaments, which $2\frac{2}{5}$ in eye.

Scales (pockets) 56? in lateral
line to end of broken tail; 5 above,

14? below, 10 predorsal to occiput, scales with 9 or 10 radiating apical spinuliferous keels, last spinules not extended beyond hind scale edge; circuli fine, complete.

D. II, 9-50?, first branched dorsal ray broken, estimated at least $2\frac{2}{3}$ in head; interdorsal $4\frac{1}{4}$; A. 50?, fin height 6; pectoral rays I, 13, fin 3 in head; ventral rays I, 6, fin $4\frac{1}{5}$.

Light brown, head and body paler to whitish below, branchiostegal region, breast and belly sprinkled with dusky dots. Iris whitish, dark neutral gray above. Inside mouth pale. Inside gill opening with dusky. Fins brownish. Ventrals with more or less dusky.

British India, Fishes, vol. 1, 1889, p. 532,
fig. 160.

Odontonectes pinjalo Day, Fishes of India,
Pt. 1, 1875, p. 29 (name).

Pinjalo pinjalo Fowler, Copeia, no. 58, June
18, 1918, p. 63 (Philippines); Proc. Acad.
Nat. Sci. Philadelphia, 1927, p. 278 (Orin;
Philippines).

Mesoprion mitchelli Günther, Ann. Mag.
Nat. Hist. London, series 3, vol. 19, 1867, p.
257, pl. 9. Madras Museum.

Odontonectes erythrogastrus (not Cuvier)
Fowler, Journ. Acad. Nat. Sci. Philadelphia,
series 2, vol. 12, 1924, p. 528 (Padang).

Philippines.

1635-

U. S. N. M., No. 78214. Cape Santiago
Light, S. 79° W., 4.5 miles (lat. 13°
 $47' 20''$ N., long. $120^{\circ} 43' 30''$ E.),
Balayan Bay, Luzon. In 180 fathoms.
February 20, 1909. Albatross
Collection (D. 5363). Length 208
mm to end of damaged tail.
Type.

$3\frac{1}{8}$ to $4\frac{1}{6}$; A. III, 11, I, third spine
 $2\frac{3}{4}$ to $3\frac{1}{10}$, first ray $2\frac{4}{5}$ to $3\frac{1}{8}$;
caudal $3\frac{1}{3}$ to $3\frac{2}{5}$ in combined
head and body to caudal base;
least depth of caudal peduncle
 $3\frac{1}{4}$ to $3\frac{1}{2}$; pectoral 1 to $1\frac{1}{8}$;
ventral $1\frac{3}{5}$ to 2.

Backs brown, lower half of
body whitish. Iris grayish.
Indistinct pale median lateral
band from eye to caudal base,
little above its middle. Fins
brown, lower paler. Caudal
ends black.

Muscat, India, East Indies,
Philippines, Japan, Riu Kiu.

1636

Caelorhynchus tokiensis (Steindachner and
Döderlein)

Macrurus tokiensis Steindachner and
Döderlein, Denks. Akad. Wiss. Wien,
Math. naturw. Cl., vol. 53, p. 283, 1887
(type locality: Japan).

Coelorhynchus tokiensis Jordan and Snyder,
Annott. Zool. Japon., vol. 3, p. 120, 1901
(Yokohama). — Jordan and Starks,

Bull. U. S. Fish Comm., vol. 22, p. 620,
1902 (1904) (reference). — Jordan, Tanaka,
Snyder, Journ. College Sci. Tokyo, vol.
32, pt. 1, p. 418, 1913 (reference). —

Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
vol. 51, p. 179, 1916 (Eastern Sea, 361 to 391
fathoms); Bull. U. S. Nat. Mus., no. 100,
vol. 1, p. 431, 1920 (diagnosis in key).

Depth 8?; head $3\frac{1}{6}$?, width $2\frac{3}{4}$.

Snout to eye $2\frac{1}{4}$ in head; eye $7\frac{1}{5}$, $3\frac{1}{8}$ in snout, $1\frac{2}{5}$ in interorbital; maxillary reaches opposite hind eye edge, length from front end 4 in head; mandibular barbel 2 in eye; teeth simple, conic, above in 2 or 3 series with outer enlarged wide set row, more villiform and in 4 or 5 irregular rows; interorbital 5, low, broadly convex. Gill rakers 0+7 low rather robust tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $\frac{1}{2}$ of eye.

Scales not made out.

D. II, 7-100?, second simple ray slender, entire, $2\frac{2}{3}$? in head; A. 88?, fin height equals orbit; pseudocaudal 5 in orbit; pectoral

rays I, 15, fin $2\frac{2}{3}$ in head; ventral
rays I, 6, fin 3.

Brown, more or less dusky.
Head pale, more or less translucent
on muzzle and snout, also under
surface of head. Iris pale or
grayish. Inside mouth pale.
Inside gill opening dusky.
Fins more or less dusky.

Japan. The above described
specimen in very poor condition,
bisected, therefore not revealing
all the characters.

U. S. N. M., no. 77194.

Albatross Collection (D. 4911).

Length 540 mm.

Coelorhynchus triocellatus Gilbert and Hubbs

Coelorhynchus triocellatus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
466, fig. 12, 1920 (type locality: north
of Tawi Tawi, in 315 fathoms). —

Weber and Beaufort, Fishes Indo Austral.
Archip., vol. 5, p. 45, 1929 (compiled).

Depth $6\frac{1}{3}$; head $3\frac{1}{2}$, width 2. Snout
to eye $2\frac{1}{5}$ in head ~~to eye~~; eye $4\frac{1}{4}$,
2 in snout, $1\frac{1}{4}$ times interorbital;
orbit $3\frac{3}{4}$ in head, $1\frac{1}{2}$ in snout, $1\frac{1}{3}$
times interorbital; maxillary reaches $\frac{1}{2}$
in eye, length to front end $4\frac{1}{4}$ in head;
mandibular barbel $2\frac{3}{4}$ in eye; teeth
in villiform bands in jaws, of 5 or 6
irregular rows; interorbital $5\frac{1}{5}$ in
head, low, level. Gill rakers 0 + 6,
low spiniferous tubercles on second
arch, $\frac{1}{4}$ of gill filaments, which $2\frac{3}{5}$
in eye.

Scales 76 (pockets) in lateral line

to pseudocaudal; 6 above, 14 below,
10 predorsal forward to occiput.
Scales with 7 to 10 apical radiating
spinuliferous keels, last spinule
little extended beyond hind scale
edge; circuli moderate, complete.

D. II, 9 - 73, second simple ray
elongated and filamentous,
entire, length $1\frac{1}{3}$ in head;
interdorsal space $4\frac{1}{6}$; A. 75,
fin height $3\frac{1}{3}$ in head;
pseudocaudal 2 in eye; pectoral
rays I, 16, fin $1\frac{2}{3}$ in head; ventral
rays I, 6, fin 2.

Brown, paler below and
especially on muzzle and under
surface of head. Iris grayish.
Inside mouth and gill opening
with dusky. Belly tinged with dark
gray. Large dark brown blotch at
and above pectoral fin base, another

saddle like at front of second
or lower dorsal fin and third
before middle of latter. Fins
all brownish, ventrals dark.

Philippines.

U. S. N. M., no. 78217. Mt. Dromedario
(Tawi Tawi), S. 16° W., 19.2 miles
(lat. 5° 28' 30" N., long. 120° 02' 27" E.),
north of Tawi Tawi. In 315 fathoms.
September 23, 1909. Albatross
Collection (D. 5575). Length 189
mm.

PHILADELPHIA FRIDAY JANUARY 27 1933 1933

THE WEATHER

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Coelorhynchus velifer Gilbert and Hubbs

Coelorhynchus velifer Gilbert and Hubbs,
Bull. U.S. Nat. Mus., no. 100, vol. 1, p.
(427) 452, fig. 10, 1920 (type locality:
off south west Luzon, in 135 to 244
fathoms).

Depth $7\frac{1}{8}$?; head $4\frac{1}{2}$, width 2.
Snout to eye $2\frac{3}{4}$ in head; eye 4, $1\frac{1}{2}$
in snout, equals interorbital; orbit
 $3\frac{2}{3}$ in head, $1\frac{1}{5}$ in snout, $1\frac{1}{5}$ times
interorbital; maxillary reaches $\frac{1}{2}$ in
eye, length to front end $3\frac{3}{4}$ in head;
mandibular barbel 5? in eye; teeth
in villiform bands in jaws, of 5 or
6 irregular series; interorbital $3\frac{2}{5}$
in head, low, nearly level. Gill rakers
C+5 low rough tubercles on second
arch, 14 of gill filaments, which $\frac{1}{2}$
of eye.

Scales (mostly pockets) 77? in
lateral line to broken end of tail;
6 above, 14 below, 30 predorsal, of

which 10 forward to occiput. Scales with 5 to 10 apical radiating spinules, last little extended behind scale edge; circuli moderate, complete.

D. II, 9 — 84?, second simple ray elongate filament, entire, $1\frac{1}{7}$ times head; interdorsal space $2\frac{3}{4}$; A. 86?, fin height $3\frac{2}{5}$; pectoral rays I, $1\frac{1}{2}$, fin $1\frac{1}{8}$ in head; ventral rays I, 6, fin $1\frac{2}{5}$.

Light brown, paler below, but neutral gray to blackish on under surface of belly. Iris gray to whitish. Inside mouth pale. Inside gill opening blackish. Fins pale brownish, ventrals more or less dusky.

Philippines. The brownish black

Depth $2\frac{2}{5}$ to $2\frac{4}{5}$; head 3 to $3\frac{1}{3}$, width $1\frac{4}{5}$ to $2\frac{1}{8}$. Snout $3\frac{1}{2}$ to $3\frac{4}{5}$ in head from snout tip; eye $3\frac{1}{2}$ to $4\frac{1}{2}$, 1 to $1\frac{1}{4}$ in snout, $1\frac{1}{8}$ to $1\frac{1}{2}$ in interorbital; maxillary reaches eye or to $\frac{1}{4}$ its diameter, expansion $2\frac{1}{3}$ to 3 in eye, length 3 to $3\frac{1}{8}$ in head from snout tip; lips rather narrow, fleshy; teeth very small, somewhat biserial with outside row little larger; palate and tongue edentulous; interorbital 3 to $3\frac{1}{2}$, elevated convexly; preopercle edge finely serrated, angle rounded. Gill rakers 8 + 14, lanceolate, equal gill filaments or little over $\frac{1}{2}$ of eye.

Scales 70 along lateral line to caudal base and about 12 more on latter; tubular scales 47 to 50 in lateral line to caudal base and 10 more on latter; 10 or 11 scales above lateral

1644

spot alleged above and behind
pectoral fin not evident in
type now, nor is it shown on
the figure. A second less distinct
spot, extended from first dorsal
ray and the lateral line is also
not evident now.

U. S. N. M., No. 78216. Escareco Light,
S. 71° W., 2.75 miles (lat. $13^{\circ}32'15''$ N.,
long. $121^{\circ}02'$ E.), China Sea, vicinity
southern Luzon. In 244 fathoms.
July 24, 1908. Albatross Collection
(D. 5294). Length 240 mm. Type.

line to caudal base, 19 or 20 below,
19 to 21 predorsal forward to occiput;
5 to 7 rows on cheeks. Scales with 12
to 15 basal radiating striae; 80 to 90
apical denticles, with 10 to 14 transverse
series of basal elements; circuli fine.

D. XI, 14, I, fourth spine 2 to $2\frac{1}{2}$ in
total head length, eleventh spine $2\frac{2}{3}$
to $2\frac{3}{4}$, first ray $2\frac{1}{5}$ to $2\frac{1}{2}$; A. III, 10, I,
third spine $2\frac{1}{4}$ to $2\frac{2}{5}$, first ray $2\frac{1}{8}$ to
 $2\frac{1}{5}$; caudal $2\frac{3}{4}$ to $2\frac{4}{5}$ in combined
head and body to caudal base; least
depth of caudal peduncle $2\frac{2}{5}$ to $2\frac{3}{5}$ in
total head length; pectoral 1 to $1\frac{1}{8}$;
ventral $1\frac{1}{2}$.

Brown generally, little paler below.
Each row of scales on back and sides
above shows dark median streak.
Vertical fins and ventrals dusky
on edges and terminally.

1645

Coelorhynchus weberi Gilbert and Hubbs

Coelorhynchus weberi Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p.
(431) 503, figs. 25-26, 1920 (type
locality: off northern Luzon, in 224
fathoms).

Coelorhynchus commutabilis Smith and
Radcliffe, Proc. U. S. Nat. Mus., vol. 43,
p. 132, fig. 7, 1912 (off northern Luzon,
224 fathoms).

Depth $7\frac{1}{2}$; head $3\frac{1}{2}$, width $2\frac{1}{5}$.
Snout to eye $2\frac{1}{10}$ in head; eye 6,
3 in snout, $1\frac{1}{2}$ in interorbital;
orbit $5\frac{1}{8}$ in head, $2\frac{1}{5}$ in snout, $1\frac{1}{8}$
in interorbital; maxillary reaches $\frac{2}{3}$
in eye, length from front end 4 in
head; prebral length $2\frac{1}{2}$; mandibular
barbel $1\frac{3}{4}$ in eye; teeth fine, in
rather broad villiform bands in
jaws; interorbital $4\frac{3}{4}$ in head, low,
level. Gill rakers 0 + 5 low-spinescent
tubercles on second arch, less than $\frac{1}{2}$

of gill filaments, which $2\frac{1}{2}$ ¹⁶⁴⁶ in eye.

Scales 74 in lateral line; 5 above, 11 below, 6 predorsal to occiput. Each scale with 5 to 7 spinous beaks apically, last ones hardly or only slightly extended beyond scale edge; circuli rather coarse, more or less complete.

D. II, 8 - 64, second simple ray with front edge entire, length 2 in head; interdorsal space 4; A. 67, fin height 6; pectoral rays I, 17, fin. 2? in head; ventral rays I, 6, fin $2\frac{7}{8}$; small pseudocaudal (broken) $3\frac{1}{4}$? of eye.

Light brownish, little paler ventrally. Fins dark brown. Belly gray. Inside mouth dark. Inside gill opening blackish.

Philippines.

U.S.N.M., No. 78225. Hermanos
Island (N.), N. 86° E., 16.75 miles
(lat. $18^{\circ} 34' 15''$ N., long. $121^{\circ} 51' 15''$ E.),
off northern Luzon. In 224 fathoms.
November 12, 1908. Albatross
Collection (D. 5325). Length 315
mm. Type.

jaws or on vomer, none on palatines;
 interorbital ~~3 to 3 1/5~~, broadly
 convex; preopercle edge minutely
 denticulate. Gill rakers 10 + 25,
 finely lanceolate, equal gill
 filaments or $\frac{1}{2}$ of eye.

Scales 54 to 57 in lateral
 line to caudal base and 4 more
 on latter; 9 scales above lateral
 line, 15 below, 20 predorsal
 to occiput and 7 more forward
 opposite front eye edge, 4 rows
 on cheeks. Scales with 8 or 9
 basal radiating striae; apical
 denticles 55 to 70, with 11 or 12
 transverse series of basal
 elements; circuli fine.

D. X, 14, II, third spine $1\frac{2}{3}$ to
 $\frac{2}{3}$ in total head length, first ray

Genus Hymenocephalus Giglioli

Hymenocephalus Giglioli, Pelagos.
Magg. Prod. mar. Genova, p. 228,
 1884. (Type Hymenocephalus italicus
Giglioli, monotypic.)

Mystacourus Günther, Rep. Voy.
Challenger, vol. 22, p. 124, 1887. (Type
Mystacourus longibarbis Günther,
 designated by Jordan, Genera of
Fishes, pt. 4, p. 437, 1920.)

Hymenogadus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
 (520) 521, 1920. (Type Hymenocephalus
gracilis Gilbert and Hubbs, orthotypic.)

Papurocephalus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p. ⁽⁵²¹⁾
 539, 1920. (Type Hymenocephalus
aterimus Gilbert, orthotypic.)

Body with very short trunk and long slender tapering tail. Head large, soft, cavernous, robust. Snout abrupt, truncate, parabolic. Eye very large, orbital edge forming part of upper profile of head. Mouth wide, lateral. Mandibular barbel long. Bones of head membranaceous. Scales thin, deciduous, with fine short spines. Head naked, also preventral region of abdomen partly or entirely so. First dorsal broad, advanced far forward over pectoral base, spine smooth. Second dorsal and anal origins nearly opposite, well separated from end of first dorsal. Pectoral rather narrow, branched rays 9 to 15.

Small, fragile species, tropical and usually less than 300 mm long. Known chiefly by the soft thin bones of the large head.

Hymenocephalus antraeus Gilbert and Cramer

Hymenocephalus antraeus Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, p. 428, pl. 46, fig. 2, 1897 (type locality: off Hawaiian Islands, 298 to 343 fathoms). — Garman, Mem. Mus. Comp.

Zool., vol. 24, p. 395, 1899 (reference). — Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 663, 1903 (Pailolo Channel; off Oahu; Kauai; Maui; 257 to 437 fathoms). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 521, 1920 (Albatross Station D. 3467). — Fowler,

Mem. Bishop Mus., vol. 10, p. 87, 1928 (Hawaiian Islands).

Maenurus (Hymenocephalus) antraeus Branner, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 390, 1906 (reference).

Depth $6\frac{2}{3}$ to $7\frac{1}{5}$; head $4\frac{3}{4}$ to $5\frac{1}{4}$, width 2 to $2\frac{1}{4}$. Snout $4\frac{2}{3}$ to $4\frac{3}{4}$ in head, $1\frac{2}{5}$ to $1\frac{2}{3}$ in eye; eye $2\frac{1}{2}$ to $2\frac{3}{4}$ in head; preoral vertical, length 5; maxillary reaches nearly or quite opposite hind eye edge, length from front end $1\frac{3}{4}$ to 2 in head; barbel absent or vestigial; teeth minute, in narrow villiform bands or triserial, uniform; interorbital $3\frac{1}{3}$ to $4\frac{1}{4}$ in head, $1\frac{2}{5}$ to $1\frac{1}{2}$ in eye, well concave. Gill rakers 6 + 17, low, ^{spinescent} tubercles on second arch, $2\frac{1}{3}$ in gill filaments, which $\frac{1}{4}$ of eye.

Scales most all fallen, thin, large, cycloid and pockets largely

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ocellus. In addition, blackish median frontal band from above eyes to snout tip. Thin edge of both dorsal and anal narrowly blackish and blackish transverse band at caudal base, more diffuse with age. Iris whitish, except for ocular band, which not meeting its fellow on breast. Paired fins whitish. Obscure pale dusky blotch, not so dark as vertical bands, though slightly larger than eye, just below lateral line and between fourth and fifth transverse blackish band.

India, East Indies. In young examples the last six transverse bands are arranged more as pairs.

obliterated; 5? scales above lateral line, 10? predorsal forward opposite hind edge of orbit. Scales with simple; rather large, complete circuli.

D. II, 7 — 84? to 100, second simple ray slender, entire, $1\frac{1}{4}$ to $1\frac{2}{5}$ in head; interdorsal space $1\frac{3}{5}$ to $1\frac{3}{4}$; A. 115, fin height 3?; pectoral I, 9 or I, 10, length $1\frac{1}{8}$ to $1\frac{1}{2}$? in head; ventral rays I, 11, length $1\frac{2}{5}$ to $1\frac{3}{5}$ in head.

Brownish, long slender tapering tail paler. Most of head and trunk more or less dusky to blackish brown, with brilliant leaden silvery reflections,

Depth $1\frac{2}{3}$ to $1\frac{1}{2}$; head $2\frac{3}{5}$ to 3, width $1\frac{7}{8}$ to 2. Snout 3 to $3\frac{1}{2}$; eye $2\frac{2}{5}$ to $2\frac{7}{8}$, greater than snout in young to equal to its length with age, likewise inter-orbital; maxillary reaches opposite hind nostril, $3\frac{3}{4}$ to 4 in head; interorbital $3\frac{1}{8}$ to $3\frac{1}{4}$, broadly convex. Gill rakers 5 + 9, short slender points, $\frac{1}{5}$ of gill filaments, which $1\frac{2}{3}$ in eye.

Scales 42 or 43 between gill opening and caudal base; tubes 32 or 33 in lateral line; 9 to 11 scales above lateral line, 22 or 23 below. Scales with 8 or 9 basal radiating striae; apical denticles 43 to 85, with 2 to 5 transverse series of basal elements; circuli fine.

D. X or XI, 19, I or 20, I, last spine $1\frac{3}{5}$ to $1\frac{2}{3}$ in head, fifth ray $1\frac{1}{3}$ to $1\frac{1}{2}$; A. III, 16, I or 17, I, second spine $1\frac{2}{5}$ to $1\frac{3}{5}$, fifth ray $1\frac{1}{4}$ to $1\frac{2}{5}$; least depth of caudal peduncle 3 to $3\frac{1}{3}$; caudal with hind edge truncate, $1\frac{1}{4}$ to $1\frac{2}{3}$; pectoral $1\frac{1}{5}$ to $1\frac{1}{4}$; ventral 1 to $1\frac{1}{5}$.

Pale brownish generally, inclining to whitish on lower surface of head and abdomen. Eight blackish-brown transverse bands, each greatly narrower than pale interspaces, though extend on vertical fins. First ocular, from predorsal; second little arched forward to embrace hind portion of opercle; seventh on caudal peduncle, broader in young and in very young as black

especially sides of head and abdomen. Iris dusky or dark neutral gray. Inside mouth pale or gray. Inside gill opening sprinkled with dusky, paler well inside and often with silvery or coppery tints. Often silvery gray lateral streak along middle of side of tail. Fins all pale or very light brownish, often with dark speck at base of each dorsal and anal ray.

Hawaiian Islands. A very abundant species, with head, trunk and fore part of body blackish, overshot with silvery gray sheen.

Ambonia, Ceram)...

Chaetodon octolineatus Gray, Cat. Fish.
Crown, vol. 6, 1854, p. 64. Indian Ocean.

U. S. N. M., No. 47716. Lat. $21^{\circ}13'N$,
 long. $157^{\circ}43'37''W$, Hawaiian Islands.
 In 310 fathoms. December 3, 1891.
Albatross Collection (D. 3467). Length
 65 to 90 mm. 5 examples.

U. S. N. M., No. 47727. Lat. $21^{\circ}10'30''$
 N., long. $157^{\circ}48'30''$, Hawaiian Islands.
 In 337 fathoms. December 4, 1891.
Albatross Collection (D. 3471). Length
 110 to 155 mm. 3 examples.

U. S. N. M., No. 47735. Lat. $21^{\circ}8'30''$
 N., long. $157^{\circ}49'W$, Hawaiian Islands.
 In 343 fathoms. December 4, 1891.
Albatross Collection (D. 3470). Length 117
 to 170 mm. 51 specimens. Types.

U. S. N. M., No. 47740. Lat. $21^{\circ}9'N$,
 long. $157^{\circ}53'W$, Hawaiian Islands.
 In 298 fathoms. December 6, 1891.
 [Length 110 to 160 mm. 8 eighth examples.
Albatross Collection (D. 3476).

(Kubi, New Guinea). — Day, Fauna British India, vol. 2, 1889, p. 9. — Pellegrin, Bull. Soc. Zool. France, vol. 30, 1905, p. 84 (Baie d'Along, Tonkin). — Evermann and Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 96 (Bacon). — Cokerell, Mem. Queensland Mus., vol. 3, 1915, p. (Queensland). — Tuhl, Arch. Naturges., band 9, abth. A, heft 5, 1923, p. 84 (East Indies, New Guinea, Indian Ocean, Mysol, Gungibau, Matschiri on Bougainville Island, Talassia on New Pomerania).
Chetodon octofasciatus Bonnaterre, Tabl. Ichth., 1788, p. 85, plate 55, fig. 211 (East Indies).
Citharoedus octofasciatus Kaup, Arch. Naturges., band 26, abth. 1, 1860, p. 142.
Tetragnopterus (Tetragnopterus) octofasciatus Bleeker, ~~Arch. Mus. Ichth. Nat. Hist. Atlas~~ Ichth. Ind. Neerl., vol. 9, 1877, p. 38, plate (14) 376, fig. 3 (Singapore, Banka, Java, Suizend Islands, Bawean, Sumbawa, Celebes,

U. S. N. M., No. 51674.

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Mokuhooniki Island^{et}, S. $81^{\circ}45'$, W. $9.5'$, Pailolo Channel, between Maui and Molokai. In 258 to 284 fathoms. April 29, 1902. Albatross Collection (D. 3898). Length 107 to 144 mm. 6 examples.

U. S. N. M., No. 55240. Diamond Head Light, N. $50^{\circ}30'$, E. $10.3'$, south coast of Oahu. In 294 to 330 fathoms. May 6, 1902. Albatross Collection (D. 3917). Length 145 to 168 mm. 3 examples.

U. S. N. M., No. 55246.

Length 160 to 185 mm. 12 examples.

U. S. N. M., No. 55247.

Length 75 to 190 mm. 89 specimens.

Chaetodon octofasciatus Bloch. 393

Chaetodon octofasciatus Bloch, Natürges.
Arch. Fisch., band 3, 1787, p. 113, plate 215,
fig. 1. East Indies. — Gmelin, Syst. Nat. Linn.,
1789, p. 1262 (India). — Walbaum, Arted.
Pisc., vol. 3, 1792, p. 403 (in Bloch). — Forster,
Fam. Indica, 1795, p. 15. — Schneider, Syst.
Ichth. Bloch, 1801, p. 22 (India). — Lacépède,
Hist. Nat. Poiss., vol. 4, 1802, pp. 460, 491
(East Indies). — Cuvier, Hist. Nat. Poiss., vol. 7,
1831, p. 13 (no locality). — Günther, Cat. Fish.
Brit. Mus., vol. 2, 1860, p. 17 (Singapore). —
Kner, Reise Novara, Fische, 1866, p. 98 (Java).
— Günther, Cruise of Curaçoa, Brenchley,
1873, p. 410 (Nisul, Moluccas). — Day,
Fishes of India pt. 1, 1875, p. 108. — Károli,
Genes. Füzetek, Budapest, vol. 5, 1881, p. 155
(Singapore, Sarawak). — Meyer, Linn. Soc.
Esper. Hist. Nat. Madrid, vol. 14, 1885, p. 17

1656

U. S. N. M., No. 55248. Mokuhooniki
Islet, S. $81^{\circ}30'$, W. $20.1'$, north east
approach to Pailolo Channel, between
Maui and Molokai. In 297 to 306
fathoms. July 21, 1902. Albatross
Collection (D. 4088). Length 165 to
170 mm. 5 examples.

U. S. N. M., No. 55250. Mokualea
Point, S. 66° , E. $10.4'$, vicinity of
Kauai. In 275 to 368 fathoms.
June 23, 1902. Albatross Collection
(D. 4025). Length 68 to 70 mm.
2 examples.

Chaetodon aureofasciatus Macleay.

Chaetodon aureofasciatus Macleay, Proc. Linn. Soc. New South Wales, vol. 2, 1878, p. 351, plate 8, fig. 3. Port Darwin, Queensland. — Klunzinger, Sitzb. Akad. Wiss. Wien, band 80, heft 1, 1879, p. 360 (Port Darwin). — McCulloch, Records Austral. Mus., vol. 14, no. 1, 1923, p. 6, (Holbourne Island, Queensland).

Plate 2, fig. 2

Deep as long, without caudal. Snout short. Mouth very small. Scales 40. D. XI, 21; A. III, 16. Brownish yellow. Golden ocular band from predorsal to and on breast. Another from humeral region to hind opercle edge through pectoral base to belly. Young with double band across caudal base. Length 127 mm. (Macleay.)

1657

Hymenocephalus aterrimus Gilbert

Hymenocephalus aterrimus Gilbert,
Bull. U. S. Fish Comm., vol. 23, pt. 2,
p. 666, pl. 93, 1903 (1905) (type
locality: off Kawai Island; Molokai;
Kaiwi Channel; Bird Island; Nihoa;
293 to 800 fathoms). — Gilbert and

Hubbs, Proc. U. S. Nat. Mus., vol. 51, p.
145, 1916 (reference); Bull. U. S. Nat.
Mus., no. 100, vol. 1, pp. (521) 539, 540,
1920 (reference). — Fowler, Mem.
Bishop Mus., vol. 10, p. 87, 1928 (compiled).

Depth $6\frac{1}{4}$ to 7; head $4\frac{7}{8}$ to $5\frac{2}{3}$,
width $1\frac{4}{5}$ to $2\frac{1}{8}$. Snout $3\frac{1}{2}$ to 4 in
head; eye $3\frac{1}{2}$ to $4\frac{1}{4}$, 1 to $1\frac{2}{5}$ in snout,
 $1\frac{2}{3}$ to $1\frac{7}{8}$ in interorbital; preoral
length 4 to $4\frac{3}{5}$ in head; maxillary
reaches opposite hind eye edge, length
from front end $1\frac{3}{4}$ to $1\frac{4}{5}$ in head;
no barbel; teeth form very narrow,
villiform bands in jaws, minute,
depressible, in but few or several series;

interorbital $2\frac{1}{2}$ to 3 in head, low, cavernous like most of head and concave. Gill rakers 4 or 5 + 20 or 21. low compressed spinuliferous tubercles on second arch, long as gill filaments, which $\frac{1}{3}$ of eye.

Scales all very caducous, all fallen, (pockets) 90 in lateral line, 3 above, 5 below.

D. II, 9—114, second simple ray slender, entire, $1\frac{3}{5}$ to 2 in head; interdorsal space $1\frac{1}{2}$ to $1\frac{2}{3}$; A. 110, fin height $2\frac{4}{5}$ to 3; pectoral rays I, 12, fin $1\frac{1}{5}$ to $1\frac{1}{2}$ in head; ventral rays I, 12 or I, 13, fin $1\frac{1}{4}$ to $1\frac{2}{3}$ in head, first simple ray ending in filament.

Head and trunk below neutral black, trunk above and tail dark brown. Iris dark

6. Danawan and Si Amil Islands.
September 26, 1909. Length 120 mm.

1221, 4870. Galera Bay, Mindoro.

June 9, 1908. Length 102 to 144 mm.

1059, 1060. Ligbo Point. January 1, 1908.
Length 131 to 136 mm.

4694, 4695, 4697, 4698, 22233. Little Santa
Cruz Island. May 26, 1908. Length 90 to 150
mm.

1118, 4882. Little Santa Cruz Island. May
28, 1908. Length 105 to 110 mm.

1255, 1256. Magnat, ^{roy}Laguna Gulf. June 17,
1909. Length 12 to 116 mm.

1126, 1127. Mactan Cove. April 6, 1908.
Length 100 to 120 mm.

24, 370, 371. Malapescua Island. March
16, 1909. Length 94 to 128 mm.

579. Matnog Bay. May 31, 1909. Length
100 mm.

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neutral gray. Inside mouth and gill opening black. Fins all more or less dusky, especially basally.

Hawaiian Islands. A small dark species, with blackish head and trunk.

U. S. N. M., No. 51649. Hanalei warehouse, S. 33° , W. $9.5'$, vicinity of Kauai. In 385 to 733 fathoms.

June 11, 1902. Albatross Collection (D. 3989). Length 127 mm. Type.

U. S. N. M., No. 51677.

Albatross Collection (D.).

Length 65 to 178 mm. 15 examples.

432

775, 1262, 4615. Calanganem Island.
March 16, 1909. Length 125 to 134 mm.
[1375.]

1243. Candaraman Island. January 4,
1909. Length 82 mm.

713. Caracaran, Batan Island. June 8,
1909. Length 115 mm.

506. Casagoran, Malhon Island. July
27, 1909. Length 71 mm.

7971. Catbalogan, Samar Island. April
16, 1908. Length 111 mm.

3902. Cebu market. April 4, 1908. Length
110 mm.

726, 939 to 941. Cebu market. April 5, 1908.
Length 107 to 121 mm.

557. Daisy Islet. January 6, 1910. Length
133 mm.

395, 396. Dalanganem Island. April 8,
1909. Length 125 to 126 mm.

U. S. N. M., No. 51678. Mokuapu¹⁶⁶⁰
Islet, S. 76°, W. 13', north coast of
Molokai. In 295 fathoms. April
30, 1902. Length 64 to 108 mm.
4 examples.

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790 and 791. Agojo Point, Catanduanes
Island. June 10, 1909. Length 99 to 110
mm.

1280. Alimango Bay. March 5, 1909.
Length 82 mm.

329. Atulayan Island. June 18, 1909.
Length 120 mm.

848. Baganga Bay. May 13, 1908.
Length 127 mm.

438. Batanman Island. June 13, 1909.
Length 110 mm.

755. Buang Bay, Talijit Island.
March 15, 1909. Length 134 mm.

15307. Busin Harbor, Burias Island. March 8, 1909. Length 86 mm.

922, 973. Busin Harbor, Burias Island.

April 22, 1908. Length 92 to 97 mm.

865, 866, 874. Bugin Harbor. April 23, 1908. Length 61 to 93 mm.

1272, 1273. Cabugan Island, Hinunangan.

July 30, 1909. Length 130 to 143 mm.

267. Cagayan Island. March 31, 1909.
Length 143 mm.

1661

Hymenocephalus barbatulus Gilbert
and Hubbs

Hymenocephalus barbatulus Gilbert
and Hubbs, Bull. U. S. Nat. Mus.,
No. 100, vol. 1, p. (521) 539, fig. 34,
1920 (type locality: off eastern
Mindoro, 380 fathoms).

1662

Hymenocephalus cavernosus (Goode and Bean)

Bathygadus cavernosus (Goode and Bean),
Proc. U. S. Nat. Mus., vol. 8, p. 598,
1885 (type locality: lat. $28^{\circ}45'N$, long.
 $86^{\circ}26'W$, Gulf of Mexico, 227 fathoms).

— Günther, Rep. Voy. Challenger, vol. 22,
p. 156, 1887 (note). — Garman, Mem.
Mus. Comp. Zool., vol. 24, p. 395, 1899
(reference).

Hymenocephalus cavernosus (Goode and
Bean), Oceanic Ichth., p. 408, pl. 97, fig.
341, 1895 (type). — Jordan and Evermann,
Bull. U. S. Nat. Mus., no. 47; vol. 3, p.
2580, 1898 (copied). — Gilbert and
Hubbs, Proc. U. S. Nat. Mus., vol. 51, p.
145, 1917 (reference); Bull. U. S. Nat.
Mus., no. 100, vol. 1, p. 521, 1920 (diagnosis
in key). — Jordan, Evermann, Clark,
Rep. U. S. Comm. Fisher., pt. 2, p. 207,
1930 (compiled).

Macrurus (Mystacourus) cavernosus
Alcock, Cat. Deep Sea Fishes Indian
 Mus., p. 117, 1899 (Gode and Bean's
 example). — Brauer, Deutsch.
 Tiefsee Exped. Valdivia, vol. 15, p.
 390, 1906 (reference).

Depth 6 to 7; head $4\frac{4}{5}$ to $5\frac{1}{8}$,
 width $1\frac{4}{5}$ to $1\frac{7}{8}$. Snout $3\frac{2}{3}$ to 4
 in head; eye 3 to $3\frac{1}{8}$, greatly
 exceeds snout, 1 to $1\frac{1}{8}$ in interorbital;
 mandibular barbel $\frac{1}{3}$ of eye;
 maxillary reaches $\frac{4}{5}$ to hind eye
 edge, length from its front edge
 $1\frac{3}{4}$ to $1\frac{7}{8}$ in head; teeth even,
 minutely villiform, in narrow bands
 in jaws; interorbital $2\frac{7}{8}$ to $3\frac{1}{8}$, low,
 unevenly depressed. Gill rakers
 4 + 17 short robust spinescent points
 on second arch, $\frac{1}{2}$ of gill filaments,
 which $\frac{1}{4}$ of eye.

Scales 80 in lateral line, of
 which 12 forward of vent; 6 above,
 6 below, 9 forward on predorsal

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to occiput opposite hind eye edge.
Scales mostly all fallen, apparently
present on head where nearly
large as on body. Scales with 4
or 5 rows of slender and rather
long spinules apically; circuli
rather coarse and few.

D. II, 9-133, first dorsal
(damaged) little over $\frac{1}{2}$ of head;
interdorsal space $1\frac{7}{8}$ in head;
A. 95, higher anteriorly and
much higher than second dorsal;
pseudocaudal minute short
rudiment; pectoral rays I, 12,
fin $1\frac{2}{3}$ to $2\frac{1}{2}$ in head; ventral
rays I, 10, fin $1\frac{1}{8}$ in head,
first ray ending in filament.

fall below lateral line. Pale band, little curved down, defines dark color of back from that of lower side and placed slightly above median axis.

Black ocular band, wide as pupil, extends from occiput, usually meets its fellow as small blotch at apex, and bordered in front and behind by narrow pale line. Iris otherwise pale or yellowish. Black band on caudal peduncle, variable as 2 black blotches or single one. Fins all pale brownish, borders of soft dorsal narrowly whitish with submarginal dark brown line. Caudal with terminal half whitish, separated from brown basal part by narrow deep brown band transversely.

Red Sea, Zanzibar, Mauritius, India, China, East Indies, Polynesia. The young are similar to the adults in color. In the black blotch on the caudal peduncle perhaps larger and ocellate.

(Queensland, Melanesia)

Light brown, with silvery white sheen on sides of head and trunk, becoming more grayish on belly. Eyes silvery white. Inside mouth and gill opening pale to whitish. Fins all pale or whitish.

Gulf of Mexico. Although Good and Bean state the scales are "cycloid, with no visible armature" several scales on the belly, in a few examples, are spinous. Their figure is quite crude, failing to represent details clearly. In all my examples, except the type, the under surfaces of the head and trunk are quite dark or swarthy.

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Depth $1\frac{3}{5}$ to $1\frac{2}{3}$; head $2\frac{2}{3}$ to $3\frac{1}{4}$, width 2 to $2\frac{1}{2}$, snout $2\frac{7}{8}$ to $3\frac{1}{8}$ measured from snout tip; eye $2\frac{1}{3}$ to $3\frac{1}{2}$, greater than snout to $1\frac{1}{8}$ with age, greater than interorbital to $1\frac{1}{5}$ with age; maxillary reaches half way to $\frac{2}{3}$ in snout, 4 to 5 in head; interorbital 3 to $3\frac{2}{3}$, broadly convex. Gill rakers 3 + 9, short weak points, $\frac{1}{8}$ of gill filaments, which $1\frac{1}{3}$ in eye.

Scales 22 to 28 between gill opening and caudal base; tubes in lateral line 25 or 26; 7 or 8 scales above lateral line, 13 to 16 below. Scales with 10 basal radiating striae; apical denticles 55 to 116, with 5 to 23 transverse series of basal elements; circuli very fine.

D. XII, 19, I or 20, I, last spine $1\frac{3}{5}$ to $1\frac{2}{3}$ in total head length, with ray $1\frac{2}{5}$ to $1\frac{1}{2}$; A. III, 17, I, II, III, third spine $1\frac{2}{5}$ to $1\frac{1}{2}$, eighth ray $1\frac{2}{5}$ to $1\frac{2}{3}$; least depth of caudal peduncle 3 to 4; caudal truncate to slightly convex behind, $1\frac{1}{3}$ to $1\frac{2}{5}$; pectoral $1\frac{1}{8}$ to $1\frac{2}{5}$; ventral 1 to $1\frac{1}{4}$.

Back brown, lower surface pale to whitish. Each row of body scales with dark brown stripe medially, usually made up of spots, large and conspicuous on dorsal and anal bases, smaller on breast and abdomen. Two pale blotches on back, usually along summit of lateral line; anterior always larger and little larger than orbit. ^{Position often} ~~position~~ ^{more} variable, as anterior may

U. S. N. M., No. 37337. Lat. $28^{\circ}45'$
N., long. $86^{\circ}26'$ W., Gulf of Mexico.
In 227 fathoms. March 14, 1885.
Albatross Collection (D. 2398).
Length 150 mm. Type of Bathygadus
cavernosus.

U. S. N. M., No. 74341.

Fish Hawk Collection (870).
Length 123 mm.

U. S. N. M., 2 examples. Lat. 28°
 $42'$ N., long. $86^{\circ}36'$ W., Gulf of Mexico.
In 280 fathoms. March 14, 1885.
Albatross Collection (D. 2397). Length 150 to 163 mm.

U. S. N. M., ~~No.~~ 5 examples. Lat. $29^{\circ}3'$
 $15''$ N., long. $88^{\circ}16'$ W., Gulf of Mexico. In 324
fathoms. February 11, 1885. Albatross
Collection (D. 2376). Length 110 to 152
mm.

(Zungibar).

Chaetodon marginatus (Ehrenberg)

Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. ⁵⁷~~44~~.

Massarah, Red Sea. — Rüppell, Neue
Wirbelth., Fische., 1837, p. 28.

Chaetodon abhortani Cuvier, l.c., p. ⁵⁸~~44~~.

Mauritius.

Hymenocephalus gracilis Gilbert and Hubbs
Hymenocephalus gracilis Gilbert and Hubbs,
 Bull. U.S. Nat. Mus., No. 100, vol. 1, p.
 (520) 522, fig. 31, 1920 (type locality:
 off southern Luzon, 16 $\frac{1}{2}$ fathoms).

Depth $8\frac{1}{2}$; head $5\frac{1}{5}$, width 2. Snout
 5 in head, $1\frac{1}{2}$ in eye; eye $2\frac{7}{8}$ in
 head; preoral short, steep, length
 $6\frac{1}{8}$; maxillary reaches $\frac{3}{4}$ in eye,
 length from front end 2 in head;
 mandibular barbel $1\frac{1}{5}$ in eye; teeth
 minute, uniform, in villiform bands
 in jaws; interorbital $5\frac{1}{3}$ in head, 2
 in eye, low, concave. Gill rakers
 0 + 12 low spinescent tubercles, $\frac{1}{3}$
 of gill filaments, which $\frac{1}{3}$ of eye.
 Scales (pockets) 50 in lateral
 line to pseudocaudal; 3 above, 8?
 below, 9? predorsal forward till
 opposite hind eye edge. Scales cycloid,
 thin, smooth; circuli moderate,
 complete.

D. II, 10-70, second simple ray

slender, pungent, with few weak antrorse denticles along front edge subterminally, length $4\frac{1}{2}$? in head; interdorsal space $1\frac{1}{3}$; A. 68, fin height $3\frac{2}{5}$?; pectoral rays I, $1\frac{1}{2}$, fin $1\frac{7}{8}$ in head; ventral rays I, 7, fin $1\frac{3}{5}$, first ray ending in filament.

Pale brown generally, sides and lower surfaces with silvery white tints, all sprinkled with brown specks or dots. Iris slate. Inside mouth pale or whitish, also inside gill opening. Chin and inner edges of branchiostegals with many parallel transverse close-set dark or blackish lines. Chest and breast before ventral fin bases coppery, with rather large scattered dusky dots or

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^{Arch.}
Ahl, Naturges., band 89, abth. A, heft 5,
1923, p. 128 (Indian Ocean, Red Sea,
Mauritius, Mozambique, Samoa, Mikendani,
Ralum, New Guinea, Bougainville, Palau,
Caroline).

Chaetodon melanotus Steindachner, Abhandl.
Senckenberg. Gesell., band 25, 1900, p. 419
(Batjan).

Tetragnopterus (Chaetodontops) melanotus
Bleeker, Atlas Ichth. Ind. Néerl., vol. 9,
1877, p. 43, plate (14) 376, fig. 1 (Batu,
Celebes, Flores, Timor, Ternate, Ceram,
Amboina, Goram, Banda).

Chaetodon dorsalis (Reinwardt) Rüppell,
Atlas Reise. Nord. Afr. Fische., 1828, p. 41,
plate 7, fig. 2. Mohila, Red Sea. — Cuvier,
Hist. Nat. Poiss., vol. 7, 1831, p. 5²⁰₃ (Moluccas;
Mohila). — Günther, Cat. Fish. Brit. Mus.,
vol. 2, 1860, p. 28 (Amboina; Fiji). —

Playfair, Fishes of Zanzibar, 1866, p. 34

specks. Middle of breast with small black depression containing dark lens-like body. Vent in black spot. Fins pale or whitish. Ventral bases blackish and dark speck or dot at base of each dorsal and anal ray. Along inner side of gill opening many parallel vertical close set striae.

Philippines.

U. S. N. M., No. 78227. Escarceo Light, N. 36° W., 3.25 miles (lat. 13° 28' 45" N., long. 121° 1' 12" E., China Sea in vicinity of southern Luzon. In 162 fathoms. July 23, 1908. Albatross Collection (D. 5294). Length 94 mm. Type.

426

Chaetodon melanotus Schneider.

Chaetodon melanotus Schneider, Syst.

Ichth. Bloch, 1801, p. 224. Tranguebar. —

Fowler, Proc. Acad. Nat. Sci. Phila., 1923, p. 42
(Madagascar).

Chaetodon melanotus (Reinwardt) Cuvier, Hist.

Nat. Poiss., vol. 7, 1831, p. 574 (Tranguebar). —

Kaup, Arch. Naturges., band 28, abth. 1, 1860,

p. 150 (India, Africa). — Klunzinger, Verh.
zool. bot. Ges. Wien, band 20, 1870, p. 5-6 (Koseir).

— Günther, Journ. Mus. Godeffroy, band 2-3
left 5-6, 1874, p. 44 (Vamoa, Fiji). — Day,

Fishes of India, pt. 1, 1875, p. 108, plate 28,

fig. 1. — Klunzinger, Fisch. Roth. Meer., 1884,

p. 777. — Day, Fauna British India, vol. 2,

1889, p. 9. — Weber, Siboga Exped., band 65,

1913, p. 307 (Elat and Fera). — McCulloch,

Records Austral. Mus., vol. 14, no. 1, 1923,

p. 3 (Murray Island, Queensland). —

Hymenocephalus grimaldii Weber

Hymenocephalus grimaldii Weber,
Siboga Exped., vol. 57, p. 169, pl. 1, fig.
1, 1913 (type locality: lat. $7^{\circ}19'45''$ S.,
long. $116^{\circ}49'5''$ E., Bali Sea, 538 meters).

— Gilbert and Hubbs, Bull. U. S. Nat.
Mus., no. 100, vol. 1, p. (520) 535, 1920
(copied).

Hymenocephalus grimaldii Weber and
Beaufort, Fishes Indo Austral. Archip.,
vol. 5, p. 59, fig. 12, 1929 (type).

1671

Hymenocephalus heterolepis (Alcock)
Macrurus heterolepis Alcock, Ann.
Mag. Nat. Hist., ser. 6, vol. 4, p. 396,
1889 (type locality: Andaman Sea
off Ross Island, 265 to 271 fathoms;
Bengal Bay between north and south
Sentinal Islands, 220 to 240 fathoms);
ser. 6, vol. 8, p. 122, 1891 (Bengal Bay,
118 to 220 fathoms); Illustrat. Zool.
Investigator, pt. 1, pl. 3, fig. 30, 1892;
Journ. Asiatic Soc. Bengal, vol. 65,
pt. 2, p. 309, 1896.

Hymenocephalus heterolepis Goode and
Bean, Oceanic Ichth., p. 403, 1895 (copied).
— Gilbert and Hubbs, Proc. U. S. Nat.
Mus., vol. 51, p. 145, 1916 (reference); Bull.
U. S. Nat. Mus., no. 100, vol. 1, p. 521,
1920 (diagnosis in key).

Macrurus (Mystacourus) savernosus (not
Goode and Bean) Alcock, Cat. Deep Sea
Fishes Indian Mus., p. 117, 1899 (Gulf
of Manar and Andaman Sea, 180 to 405
fathoms; not American specimen).

1672

Depth 5? to $7\frac{1}{4}$; head 4 to $4\frac{2}{3}$,
width $2\frac{1}{5}$ to $2\frac{1}{4}$. Snout to eye 4
in head; eye $3\frac{1}{2}$ to 4 in head, 1 to
 $1\frac{1}{10}$ in snout, $1\frac{1}{8}$ to $1\frac{1}{4}$ in eye;
orbit $3\frac{1}{8}$ to $3\frac{1}{5}$ in head, 1 in
interorbital; preoral length $4\frac{4}{5}$ to
 $5\frac{1}{2}$ in head; mandibular barbel
 $2\frac{1}{4}$ to $3\frac{1}{2}$ in orbit; maxillary
reaches opposite hind edge of
orbit, length $1\frac{7}{8}$ to $1\frac{9}{10}$ in head;
teeth fine, in villiform bands in
jaws - of 4 or 5 irregular rows;
interorbital $2\frac{4}{5}$ to 3 in head,
low, ~~car~~carneous, depressed
irregularly. Gill rakers 4 + 18 low
spinescent clavate tubercles on
second arch, $\frac{1}{3}$ of gill filaments,
which $2\frac{1}{2}$ in eye.

Scales (porkets) 90 or more
in lateral line; 4 above, 8?

503. Port Ciego, Balabac. January 3, 1909. Length 100 mm. 424

8778. Dinalasag Island. June 12, 1909. Length 146 mm.

8977. Rapurapur Island and Strait. June 22, 1909. Length 145 mm.

670. Taganak. January 7, 1909. Length 140 mm.

A1323. Tifu Bay. December 10, 1909. Length 146 mm.

A566 to A568. Tuta Bay, south Jolo. September 19, 1909. Length 175 to 188 mm.

6642, 6649 to 6651. Varadero Bay, Mindoro. July 23, 1908. Length 152 to 158 mm.

A1442. Kait Point, Libani Bay, Celebes. December 29, 1909. Length 160 mm.

84193 U.S.N.M. Cebu, Philippines. Dr. F. Baker. Length 94 mm. is Chaetodon chrysogonus.

predorsal forward opposite hind orbital edge. Scales with 9 to 11 irregular parallel rows of spinules, last extending well behind hind scale edge; circuli coarse, rather obscure apically.

D. II, 10 — 106, second simple ray slender, entire, length $1\frac{1}{4}$ in head; interdorsal space $1\frac{3}{5}$; A. 110, fin height 3; pectoral rays I, 14, fin $1\frac{2}{3}$ in head; ventral rays I, 11, fin $1\frac{1}{2}$, first ray ending in filament.

Light brown generally. Head little paler than body, especially above and on muzzle. Lower or under surface of head, breast and belly dark or dusky, with coppery shade before ventral bases. Isthmus inside gill opening,

423

sulphur yellow, rays more dusky.
6184. Mansalay, Mindoro. June 4, 1908.
Length 160 mm.

4738. Maricaban Island, Luzon.
January 20, 1908. Length 160 mm.

6592, 6596. Maricaban Island near
Sepoc Point. July 21, 1908. Length 159 to
170 mm.

1055, 5561 to 5563. Masbate reef, Masbate.
April 20, 1908. Length 81 to 146 mm.

6240, 6280. Medic Island, Galera Bay,
Mindoro. June 9, 1908. Length 127 to 147 mm.

8066. Mampog, Amabayan Island.
March 3, 1909. Length 145 mm.

652, 3594. Pagapas Bay. February 20, 1909.
Length 130 to 145 mm.

11263. Refugio Island, Pasacao.
March 9, 1909. Length 138 mm.

8018. Port Banabacan, Marinduque.
February 23, 1909. Length 140 mm. 2 examples.

side of breast and belly ~~dark~~
~~or dusky~~, behind ventral bases
with fine parallel vertical striae.
Breast before ventral with dark
depression containing small dark
gray lens-like body. Vent in
black blotch extending forward as
median black line on belly.

Inside mouth pale or whitish.
Gill opening similar, only dusky
or dark brown above inside and
along edges of branchiostegals.

Gulf of Manár, Bengal Bay,
Andaman Sea.

U. S. N. M., No. 44421. Andaman
Sea. Investigator Collection.

Indian Museum. Length 127 to 134
mm. 2 examples, rather poorly
preserved.

425

Chaetodon reinwardti Günther.

Chaetodon reinwardti Günther, Cat. Fish.

Brit. Mus., vol. 2, 1860, p. 23 (on Cuvier).

Chaetodon reinwardti Knap, Arch. Naturges.,
band ⁶27, abth. 1, 1860, p. 150.

Chaetodon melanotus (non Schneider)

(Reinwardt) Cuvier, Hist. Nat. Poiss., vol. 7,
1831, p. ⁷¹54. Neobucca.

Body orbicular. Snout pointed. D. XII, 25;
A. III, 13. yellowish, with ocular band and
2 black spots on caudal, one above the
other. Ventrals black, with dorsal and
anal black edged, other fins yellowish.
Length 102 mm. (Cuvier.)

Hymenocephalus italicus Giglioli

Hymenocephalus italicus Giglioli,
Pelagos. Sagg. Prod. mar. Genova,
 p. 228, fig. V, 1884 (type locality:
Genoa). — Vaillant, Expéd. Sci.
Travailleur et Talisman, Poiss., p.
 211, pl. 19, fig. 1, a-d (off Morocco;
Noudan; Cape Verde; 265 to 1042
 meters). — Goode and Bean,
Oceanic Ichth., p. 406, 1895 (copied).
 — Garman, Mem. Mus. Comp. Zool.,
 vol. 24, p. 395, 1899 (reference). —
Gilbert and Hubbs, Proc. U. S. Nat.
Mus., vol. 51, p. 145, 1916 (reference);
Bull. U. S. Nat. Mus., no. 100, vol. 1,
 p. 521, 1920 (diagnosis in key).

Macrurus italicus Günther, Rep. Voy.
Challenger, vol. 22, p. 140, 1887 (nick). —
Collett, Rép. Camp. Sci. Monaco, vol.
 10, p. 85, pl. 2, figs. 7 b-c, 1896
 (off Pico-Fayal, Azores, 800 to 927
 meters).

1676

Macrurus (Hymenoccephalus) italicus
Brauer, Deutsch. Tiefsee Exped.
Expedition, vol. 15, p. 390, 1906 (reference).

Depth 8 to $9\frac{1}{4}$; head $5\frac{2}{5}$ to 6,
width $2\frac{1}{8}$ to $2\frac{1}{4}$. Snout $3\frac{1}{4}$ to 4 in
head, $1\frac{1}{3}$ to $1\frac{4}{5}$ in eye; eye $2\frac{4}{5}$ to
3 in head; preoral profile vertical,
length 4 to 5; maxillary reaches
opposite hind eye edge, length
from front end $1\frac{2}{3}$ to $1\frac{3}{4}$ in
head; no barbel; teeth in narrow
villiform bands in jaws, minute,
uniform, of 3 or 4 irregular rows;
interorbital 3 to $3\frac{1}{5}$ in head, low,
cavernous, irregularly concave. Gill
rakers $3 + 17$, short clavate
dentigerous tubercles on second
arch, $\frac{1}{2}$ of gill filaments, which
 $4\frac{1}{2}$ in eye.

Scales all fallen and pockets
in distinct, squamation not made
out; 5? above, 12 or 13? below. Scales
with 8 or 9 small short denticles
counted transversely apically, not

extended behind scale edge; circuli
~~covered~~ coarse, complete.

D. II, 9—118, second simple
ray slender, entire, length $1\frac{2}{5}$ in
head; interdorsal space $1\frac{1}{2}$;
A. 120, fin height $3\frac{1}{5}$; pectoral
rays I, 12, fin $1\frac{2}{3}$ to $1\frac{3}{4}$;
ventral rays I, 12, fin $1\frac{1}{5}$ to $1\frac{3}{5}$,
first ray ending in filament.

Pale brown, with under
surface of head and belly darker,
all these regions also overshot
with silvery gray. Iris silvery
and muzzle above pale. Fins
all more or less pale to whitish,
ventral bases black. Inside
mouth pale to whitish. Inside
gill opening pale to whitish below,
with brown above. Breast coppery,
with median small slate colored

556. Daisy Islet. January 6, 1910.
Length 107 mm.

1158 and 1159. Iloilo market. January 2,
1908. Length 93 to 122 mm.

7915. Limboner Cove. February 8, 1909. Length 155 mm.

6024. Little Santa Cruz Island. May 28, 1908.
Length 160 mm.

1128 [508]. Mactan Cove. April 6, 1908. Length
100 mm. Pearl gray, oblique stripes pale
golden amber. Ocular bar black and
yellowish shade between upper ends. Top
of snout orange. Dorsal spines cadmium
orange anteriorly, membranes sulphur
yellow and margin dark amber, including
tips of posterior spines; submarginal bar
sulphur yellow, dusky orange beneath.
Anal like dorsal. Tips of spines amber
instead of orange. Caudal like soft
dorsal and anal but tip hyaline. Pectoral
dusky hyaline, axil yellow. Ventral

lens like body. Inner walls of
gill opening. Below and sides of
breast with parallel close set
narrow vertical striae.

Mediterranean, eastern Atlantic.

U.S.N. M., No. 42100.

Paris Museum (86+51). Length
120 mm.

U.S.N. M., No. 42103.

Paris Museum (86+49). Length
138 mm.

1322, 8171, 8172. Alibijaban Island,
Ragay Gulf. March 6, 1909. Length 130 to 141 mm.

1058 and 8114. Alimango Bay, Binas Island.
March 5, 1909. Length 138 to 143 mm.

8933. Atulayan Island, Ragay Gulf.
June 18, 1908. Length 164 mm.

8348. Buang Bay, Talajila Island.
March 15, 1909. Length 157 mm.

767. Busin Harbor, Burias Island.
March 7, 1909. Length 105 mm.

923, 1031, 1155, 5678. Busin Harbor.
April 23, 1908. Length 105 to 137 mm.

8033. Capulaan. February 24, 1909. Length
148 mm.

4785. Cananahala Bay, Ragay Gulf, Luzon.
March 11, 1909. Length 67 mm.

7723, 7752, 7754. Caxisigan Island,
Balabac. January 2, 1909. Length 143 to 152 mm.

1142 and 1143. Cebu market. April 6, 1908.
Length 92 to 95 mm.

1679

Hymenocephalus longiceps Smith and
Radcliffe

Hymenocephalus longiceps Smith and
Radcliffe, Proc. U. S. Nat. Mus., vol.
43, p. 111, pl. 23, fig. 3, 1912 (type
locality: lat. $13^{\circ}10'21''N$, long. 123°
 $59'54''E$, off south east Luzon, 201
fathoms). — Gilbert and Hubbs, Proc.

U. S. Nat. Mus., vol. 51, p. 145, 1906 (reference);
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
(520) 525, 1920 (near Hong Kong; Formosa;
western Luzon; south western Luzon;
Marinduque; Mindoro; western Bohol;
between Cebu - Bohol; south eastern
Luzon; between Jolo - Tawi Tawi; Darvel
Bay, Borneo; between Gilolo - Makyan;
107 to 498 fathoms). — Weber and Beaufort,

Fishes Indo Austral. Archip., vol. 5,
p. 57, 1929 (Weber's example).

Hymenocephalus striatissimus (part) Weber,
Siboga Exped., vol. 57, p. 168, 1913
(Flores Sea, 521 meters).

Depth $8\frac{2}{5}$; head $5\frac{1}{8}$, width 2.
 Snout to eye $3\frac{3}{4}$ in head; eye
 $4\frac{4}{5}$, $1\frac{1}{3}$ in snout; orbit $3\frac{1}{5}$
 in head; preoral very short;
 maxillary reaches opposite hind
 edge of orbit, length from front
 end $1\frac{4}{5}$ in head; mandibular
 barbel $2\frac{4}{5}$; teeth in villiform
 bands in jaws, fine, uniform,
 in 7 or 8 irregular rows;
 interorbital $5\frac{3}{5}$ in head, $1\frac{3}{4}$
 in orbit, concave. Gill rakers
 $3 + 14$ low spinescent tubercles on
 second arch, $\frac{1}{3}$ of gill filaments,
 which $2\frac{3}{4}$ in orbit.

Scales (pockets) 100 in lateral
 line; 3 above, 5 below, 11 predorsal

Depth $1\frac{1}{3}$ to $1\frac{2}{5}$; head $2\frac{2}{3}$ to $2\frac{4}{5}$, width 2 to $2\frac{1}{5}$, snout $2\frac{7}{8}$ to 3 in head; eye $3\frac{1}{8}$ to $3\frac{3}{4}$, $1\frac{1}{5}$ to $1\frac{1}{4}$ in snout, slightly greater than interorbital in young to $1\frac{1}{4}$ with age; maxillary $\frac{1}{2}$ to $\frac{2}{3}$ in snout, 4 to $4\frac{1}{2}$ in head; interorbital $3\frac{3}{4}$ to 4 , broadly convex. Gill rakers $4+4$, short broad points, 6 in gill filaments, which $1\frac{1}{5}$ in eye.

Scales 28 to 30 between gill opening and caudal base; tubercles 33 to 35 in lateral line; 8 to 10 scales above lateral line, 15 or 16 below.

Scales with 7 to 19 basal radiating striae. apical denticles 85 to 164 , with 8 to 13 transverse series of basal elements; circuli very fine.

D. XII, I to 5, I, last spine $1\frac{2}{3}$ to 2 in head, twelfth ray $1\frac{2}{5}$ to $1\frac{3}{5}$; A. III, I to 11, I, third spine $1\frac{7}{8}$ to 2 , tenth ray $1\frac{3}{5}$ to $1\frac{1}{2}$; least depth of caudal peduncle $3\frac{1}{10}$ to $3\frac{2}{5}$; caudal $1\frac{3}{5}$ to $1\frac{3}{4}$, hind edge broadly convex; pectoral $1\frac{1}{4}$ to $1\frac{1}{3}$; ventral $1\frac{1}{3}$ to $1\frac{1}{5}$.

Light brown, little paler on lower surface of head, breast and abdomen. Broad black blotch from above eye, slightly wider than eye, down over cheek and lower side of head, but not on chest. Small, variable occipital saddle-like black blotch. On each row of scales on body diffuse deep band ~~blotch~~, narrowing above and

forward until opposite hind orbital edge. Scales most all fallen and structure therefore not made out.

D. II, 10 — 138, second simple ray slender, length $1\frac{1}{3}$ in head; interdorsal space $1\frac{1}{4}$; A. 135, fin height $3\frac{4}{5}$; pectoral rays I, 14, fin $1\frac{4}{5}$ in head; ventral rays I, 7, fin slightly longer than head, first ray ending in filament.

Brown, with silvery white to gray sheen all along side of head and body. Iris pale. Inside mouth pale to white, mottled with gray. Inside gill opening pale to white, with some gray clouding. Lower face of isthmus and breast dark coppery, latter with small black depression.

Chaetodon adiergastor Seale.

Chaetodon adiergastor Seale, Philippine Journ.
Sci., vol. 5, no. 2, July 1910, p. 116, plate 1,
fig. 2. Batayan Island, Philippines.

Chaetodon fasciatus (non Forsk.) Fowler,
Copeia, no. 58, June 18, 1918, p. 64 (Philippines).

Chaetodon chrysozonus (non Cuvier) Fowler
and Bean, Proc. U. S. Nat. Mus., vol. 62,
1922, p. 55 (Cebu).

1682
containing dark neutral gray lens-
like body. Inner walls of isthmus
in gill opening, sides of breast
and belly behind ventrals with
many fine close set parallel striae.
An iridescent silvery gray pale
area on breast before each
ventral fin base, which broadly
blackish. Fins otherwise all pale
or lighter than body.

East Indies, Philippines.

U. S. N. M., No. 72927. Legaspi Light,
S. 88° W., 14.3 miles (lat. 13° 10' 21" N.,
long. 123° 59' 5" E.), east coast of
Luzon. In 201 fathoms. June 8, 1909.
Albatross Collection (D. 5459).
Length 217 mm. Type.

417
71290 U.S.N.M. Misaki, Sagami,
Japan Albatross Collection 1906.
Length 21 to 31 mm. 5 examples.

1683

Hymenocephalus lethoenus Jordan
and Gilbert

Hymenocephalus lethoenus Jordan
and Gilbert, Bull. U. S. Fish Comm.,
vol. 22, p. 615, fig., 1902 (Aug. 1904)
(type locality: Sagami Bay, Japan).
Jordan, Tanaka, Snyder, Journ.
College Sci., vol. 33, p. 413 (fig. 383
copied), 1913 (compiled). — ~~Weber~~

~~Siboga~~ Exped., vol. 57, p. 167, 1913
(Flores Sea; Malakhera Sea; Ceram Sea; Bali
Sea; 521 to 798 meters ~~deep~~ Gilbert and
Hubbs, Proc. U. S. Nat. Mus., vol. 51,
p. (145) 188, 1916 (Eastern Sea; east
coast Hondo; Suruga Gulf; Sagami
Bay; Suruga Strait; 197 to 440 fathoms);
Bull. U. S. Nat. Mus., no. 100, vol. 1,
p. 521, 1920 (diagnosis in key). —

Weber and Beaufort, Fishes Indo
 Austral. Archip., vol. 5, p. 60, 1929
(part).

1684

Depth $7\frac{1}{4}$ to $9\frac{1}{2}$; head $5\frac{1}{4}$ to 6, width $1\frac{4}{5}$ to 2. Snout $3\frac{1}{2}$ to 4 in head, 1 to $1\frac{1}{8}$ in eye; eye $3\frac{1}{4}$ to $3\frac{1}{2}$ in head, 1 to $1\frac{1}{5}$ in interorbital; preoral length 4 to $4\frac{1}{2}$ in head; maxillary reaches opposite hind eye edge or slightly beyond, length from front end $1\frac{4}{5}$ to 2 in head; no barbel; teeth minute, in very narrow villiform bands in jaws; interorbital 3 to $3\frac{1}{3}$ in head, unevenly cavernous and concave. Gill rakers 4 + 20 low-clavate spinescent tubercles on second arch, $\frac{1}{2}$ of gill filaments, which $3\frac{3}{4}$ in head.

Scales all fallen and pockets obscure so squamation not made out.

D. II, 10 - 120, second simple

1 example (with
55548 U. S. N. M.). Hawaii. Length
111 mm. 416

57000 U. S. N. M. Apia, Samoa. Bureau
of Fisheries. Length 122 to 132 mm.

2 examples.

65103 U. S. N. M. Honolulu. Albatross Collection.
65791 U. S. N. M. Panamotus. Albatross
Collection. Length 153 mm.

65792 U. S. N. M. Weno Atoll, Marshall.
Albatross Collection 1899-1900. Length 17 mm.
Tholichthys stage.

65802 U. S. N. M. Wotji Atoll. Albatross
Collection. Length 25 mm. Tholichthys stage.

70767 U. S. N. M. Aikawa, Rikuzen.
Albatross Collection 1906. Length 20 to 25 mm.
2 examples.

71733 U. S. N. M. Rapa, Okinawa, Riu
Kiu Islands. Albatross Collection 1906.

Length 30 to 49 mm. 4 examples.

75837 U. S. N. M. Oahu. Wilkes Exploring Expedition. 2 examples.

78077 U. S. N. M. Hilo, Hawaii. Bureau
of Fisheries. Length 22 to 60 mm. 4 examples.

1685

ray slender, entire, length $1\frac{1}{4}$ to $1\frac{2}{5}$ in head; interdorsal space $1\frac{2}{5}$ to $1\frac{2}{3}$; A. 110, fin $2\frac{4}{5}$ to $3\frac{1}{8}$ in head; pectoral rays I, 13, fin $1\frac{3}{5}$ to $1\frac{3}{4}$ in head; ventral rays I, 10, fin 1 to $1\frac{1}{5}$.

Brown, with silvery white to gray reflections on sides, especially on cheeks, opercle and trunk. Iris silvery to gray white. Inside mouth pale or gray. Inside gill opening whitish, gray or neutral gray to slate shaded above. Silvery gray to black on breast, isthmus and belly, with many close set vertical parallel striae, these all extending back along side of breast and behind ventral fin bases. No white blotches

11277 U.S.N.M. Akune, Satsuma,
Japan. Albatross Collection 1906.

Length 63 to 78 mm. 2 examples.

43930 U.S.N.M. Mauritius. Colonel
Nicholas Pike. Length 90 to 148 mm.
4 examples.

52499 U.S.N.M. Apia, Samoa. Bureau
of Fisheries. Length 133 to 180 mm. 4 examples.

1 example (with 52497 U.S.N.M.). Apia.
Bureau of Fisheries 1902. Length 26 mm.

55103 U.S.N.M. Honolulu, Hawaiian Islands.
Albatross Collection. Length 140 mm.

55345 U.S.N.M. Puako Bay, Hawaii.
Albatross Collection 1906. Length 30 to 54 mm.
3 examples.

55346 U.S.N.M. Waialua Bay, Oahu.
Albatross Collection 1902. Length 37 mm.

55347 U.S.N.M. Honolulu. Albatross
Collection 1906. Length 23 to 31 mm. 4 examples.

before ventral fin bases,
which black. Fins pale,
usually dark spot at base
of each dorsal and anal ray.

Japan.

U. S. N. M., No. 50936. Manazuru
Zaki, 26°, W. 6.0 miles, off Honshu.
Dn 120 to 265 fathoms. May 5, 1900.

Albatross Collection (D. 3697).

Length 140 mm. Type.

U. S. N. M., No. 51455.

Albatross Collection.

Length 85 to 123 mm. 3 paratypes.

7372. Tara Island. December 15, 1908.
Length 165 mm.

207. Tagomala Island. January 7, 1909.
Length 143 mm.

1005. Tataam, Simalue Island. February
20, 1908. Length 130 mm.

5834, 5835. Tataibuan Point. May 15, 1908.
Length 165 to 166 mm.

A991. Togean Bay, Togian Island.
November 19, 1907. Length 185 mm.

532 [395]. Usada Island. March 5, 1908.
Length 138 mm.

6652. Varadero Bay, Mindoro. July 23, 1908.
Length 184 mm.

A859. Limbe Strait, Celebes. November 9, 1907.
Length 198 mm.

4445, 4691. Apra Bay, Guam. November
19-20, 1907. Length 128 to 154 mm.

U. S. N. M., No. 77228.

1687

Albatross Collection (D. 5059). Length
95 mm.

U. S. N. M., No. 77229.

Albatross Collection (D. 5060). Length
88 to 123? mm. 2 examples.

U. S. N. M., No. 77230.

Albatross Collection (D. 4908). Length
120 mm.

U. S. N. M., No. 77232.

Albatross Collection (D.).
Length 142 to 185 mm. 2 examples.

6276. Medio Island, Galera Bay,
Mindoro. June 9, 1908. Length 155 mm.
4863. Nasugbin Bay. January 16, 1908. Length 175 mm.
8878, 8879. Near Palay Bay, Luzon.

June 16, 1908. Length 188 to 190 mm.

3904. Pagapas Bay, Luzon. February 20,
1909. Length 80 mm.

12. Pandanon Island. March 23, 1909.
Length 115 mm.

4586. Panpan Point, Tara Island. September
20, 1909. Length 195 mm.

6381. Port Janelo. July 13, 1908. Length
180 mm.

7323. Sablayan Bay, Mindoro. December 12,
1908. Length 167 mm.

679 to 683. Sablayan. December 13, 1908.
Length 49 to 90 mm.

1 example. Silino Island. August 10, 1909.
Length 29 mm.

5728. Surigao, Mindanao. May 8, 1908.
Length 184 mm.

U. S. N. M., No. 77233.

1688

Albatross Collection (D. 5066). Length
118 mm.

U. S. N. M., No. 77234.

August 13, 1906.

Albatross Collection (D. 4918). Length
166 to 147 mm. 2 examples.

U. S. N. M., No. 77235.

October 26, 1906.

Albatross Collection (D. 5093). Length
122 to 138 mm. 2 examples.

U. S. N. M., No. 77236.

Albatross Collection (D. 5067). Length ~~90?~~
53 to 90? mm. 2 examples.

412
8170. Alibijaban Island, Ragay Gulf.
March 6, 1909. Length 167 mm.

8115, 19271. Alimango Bay, Baniar Island.
March 5, 1909. Length 158 to 171 mm.

8350. Buang Bay, Talijik Island.
March 15, 1909. Length 180 mm.

1030. Capunupugan Point. May 10, 1908.
Length 140 mm.

7519. Chase Head, Endeavor Strait.
December 22, 1908. Length 185 mm.
1293. Endeavor Strait. December 27, 1908. Length 135 mm.
8242. Calumey Island, Ragay Gulf, Luzon.

March 9, 1909. Length 185 mm.

5414, 5415. Maetan Cove, Maetan Island.
April 6, 1908. Length 155 to 176 mm.

8843. Maculabo Island. June 14, 1909.
Length 195 mm.

6185, 6186. Mansalay, Mindoro. June 4, 1908.
Length 160 to 165 mm.

1035. Masamal, Surinalayang. June 12, 1909.
Length 120 mm.

Hymenocephalus longibarbis (Günther)²²⁹

Macrurus longibarbis Günther,
Rep. Voy. Challenger, vol. 22, p. 139,
pl. 18, fig. C, 1887 (type locality:
off Matuku, Fiji).

Macrurus (Mystacourus) longibarbis
Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, p. 390, 1906 (reference).

Hymenocephalus longibarbis Goode and
Bean, Oceanic Ichth., p. 406, 1895
(copied). — Garman, Mem. Mus. Comp.
Zool., vol. 24, p. 395, 1899 (reference).
— Gilbert and Hubbs, Proc. U. S.
Nat. Mus., vol. 51, p. 145, 1916 (name);
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
520, 1920 (diagnosis in key).

Hymenocephalus longibarbus Whitley, Journ.
Pan Pac. Res. Inst., vol. 2, no. 1, p. 4,
Jan. Mar. 1927 (reference). — Fowler, Mem.
Bishop Mus., vol. 11, no. 5, p. 320, 1931
(reference).

Hymenocephalus longipes Smith and Radcliffe

Hymenocephalus longipes Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 109, pl. 23, fig. 1, 1912 (type locality: between Panay and Guimaras, 137 fathoms). — Gilbert

and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. (520) 527, 1920 (off south west Luzon; between Burias-Luzon; between Marinduque-Luzon; Marinduque; between Leyte-Cebu; between Cebu-Bohol; between Panay-Guimaras; north Mindanao; 150 to 215 fathoms).

Hymenocephalus nascens Gilbert and Hubbs

Hymenocephalus nascens Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1,
p. (521) 535^{fig. 33}, 1920 (type locality: vicinity
of Hong Kong; southern Luzon; ~~northern~~
Marinduque; eastern Luzon; northern
Mindanao; Sibuko Bay, Borneo;
between Gillolo-Makayan; 100 to 423
fathoms).

Hymenocephalus lethoenus (not Jordan
and Gilbert) Weber, Siboga Exped.,
vol. 57, p. 167, 1913 (Flores Sea;
Halmahera Sea; Ceram Sea; Bali Sea;
521 to 798 meters). — Weber and

Beaufort, Fishes Indo Austral. Archip.,
vol. 5, p. 61, 1929 (note).

Depth $6\frac{1}{2}$; head $4\frac{3}{4}$, width ¹⁶⁹²
 $1\frac{2}{3}$. Snout $3\frac{7}{8}$ in head, $1\frac{1}{5}$ in
eye; eye $3\frac{1}{2}$ in head; preoral
profile but slightly inclined
from vertical, length $5\frac{1}{8}$ in
head; maxillary reaches slightly
beyond eye, length from front
end $1\frac{3}{4}$ in head; no barbel;
teeth uniform, minute, in narrow
bands in jaws, of 3 to 5 irregular
series; interorbital $3\frac{1}{5}$ in head,
 $1\frac{1}{8}$ in eye, irregularly concave.

Gill rakers $5 + 18$, low clavate
^{spinuliferous} tubercles on second arch, $\frac{1}{2}$ of
gill filaments, which $\frac{1}{4}$ in eye.

Scales (pockets) 64 in lateral
line; 4 above, 5 below, 9 predorsal

colors of predorsal. From above pectoral
 to suprascapular region broad blackish
 band up to middle of spinous dorsal,
 bordered broadly whitish and narrowing
 above, also narrow blackish bar or
 band along bases of front dorsal
 spines, bordered with whitish below.
 Iris dusky-brown. narrow pale band
 from spinous dorsal medial curves
 back over soft dorsal and down at
 front of caudal peduncle, where wider
 and forms blackish band over latter.
 margins of dorsal and anal blackish-
 brown, with narrow pale submarginal
 line. Caudal with submarginal black-
 ish brown band transversely. Each row
 of body scales with broad median
 brown band, follows obliquely over sides.
 also medial diffuse dark brown band.

Red Sea, Zanzibar, Mauritius, Bourbon,
 Andaman, East Indies, Melanesia, Polynesia,
 Hawaii. The species is very variable
 with age, the young having a large
 black ocellus on the soft dorsal and
 another on the caudal peduncle.

forward till opposite hind eye edge. Scales with 8 or 9 irregular rows of small apical spinules, last not extended behind scale edge; circuli fine, complete.

D. II, 10 - 75, second simple ray slender, pungent, entire, length $1\frac{3}{4}$? in head; interdorsal space $1\frac{1}{5}$; A. 77, fin height $3\frac{1}{4}$?; pectoral rays I, 15?, fin $1\frac{3}{4}$ in head; ventral rays I, 12, fin $1\frac{2}{5}$.

Brown, with silvery gray reflections on head and lower side of body. Under surface of

Depth $1\frac{3}{5}$ to $1\frac{3}{4}$; head $2\frac{1}{2}$ to $2\frac{7}{8}$, with 2 to $2\frac{1}{2}$. Snout $2\frac{3}{5}$ to 3 in head from snout tip; eye $3\frac{1}{8}$ to 4, 1 to $1\frac{3}{5}$ in snout, little greater than interorbital in young to $1\frac{1}{8}$ with age; maxillary $\frac{1}{2}$ to $\frac{2}{3}$ in snout, $3\frac{1}{2}$ to 4 in head; interorbital $3\frac{1}{4}$ to $3\frac{1}{2}$, broadly convex. Gill rakers 4 + 13, short points, $\frac{1}{4}$ of gill filaments, which $1\frac{2}{3}$ in eye.

Scales 35 or 36 in median lateral series between gill opening and caudal base; tubes 31 to 36 in lateral line; 7 or 8 scales above lateral line, 16 or 17 below. Scales with 10 to 11 basal radiating striae, with many as 4 incomplete auxiliaries; apical denticles 49 to 200, with 5 to 15 transverse series of basal elements; circuli fine.

D. XII, 23, I or 24, I, last spine $1\frac{2}{5}$ to $1\frac{3}{4}$ in total head length, tenth ray $1\frac{1}{3}$ to $1\frac{3}{5}$; A. III, 18, I, third spine $1\frac{7}{8}$ to 2, fifth ray $1\frac{1}{2}$ to $1\frac{3}{5}$. least depth of caudal peduncle $3\frac{1}{8}$ to $3\frac{4}{5}$; caudal slightly convex behind, $1\frac{3}{5}$ to $1\frac{7}{8}$; pectoral $1\frac{1}{4}$ to $1\frac{1}{3}$; ventral $1\frac{1}{8}$ to $1\frac{1}{3}$.

Back brownish-olive, becoming pale brown below. Broad blackish-brown ocular band, entirely across cheeks in young, but not below preopercle edge with age, also much broader with age; with narrow white bordering line in front and posteriorly above narrower white band separates darker

head, breast and belly generally dusky or neutral black. Iris gray. Inside mouth pale to whitish. Inside gill opening pale, marbled brown above. Walls of isthmus inside gill opening and patch before each ventral on breast, dark coppery. Fine vertical striae on inner face of isthmus, also extend along side of breast and behind ventral fin bases. Dark spot on middle of breast with small neutral slate lens-like body. Bases of paired fins blackish brown, in contrast to otherwise pale color. Fins mostly lighter than body.

East Indies, Philippines, China.

~~Tetragnathus (Chaetodontops) fuscus~~

Chaetodon dorsivellatus Ahl, Arch. Naturges.,
band 89, abth. A, heft 5, 1923, p. 111, plate
1, fig. 1. Takao, Formosa.

1695
U. S. N. M., No. 78229. Sipadan
Island (W.) S. 12° E., 3.8 miles
(lat. 4° 10' 35" N., long. 118° 37' 12" E.),
Sibuho Bay, Borneo. In 415
fathoms. September 27, 1909.
Albatross Collection (D. 5587).
Length 143 mm.

Gawaan, Borneo, Celebes, Sangi, Timor,
 Halmahera, Buru, Timorina, Ceram,
 Banda, New Guinea). — Bleeker, Verhand.
 Akad. Wet. Amsterdam, deel 18, no. 3,
 1879, p. 1 (Mauritius).

Chaetodon wiebeli Kaup, Ned. Tijds. Dierk.,
 deel 1, 1863, p. 127. Canton.

Chaetodon ocellatus (non Bloch) Bleeker, Ned.
 Tijds. Ned. Indie, deel 6, 1854, p. (204) 212.
 (Timor, Kupang). — Elera, Cat. Fauna Filip.,
 vol. 1, 1895, p. 485 (Luzon, Manila, Malabon).

Chaetodon ocellatus Seale, Philippine Journ.
 Sci., vol. 5, no. 4, 1910, p. 283 (Sandakan,
 north Borneo).

Chaetodon bella-maris Seale, Philippine Journ.
 Sci., vol. 9^{pt. 1}, 1914, p. 72, plate 1, fig. 1. Hong Kong.
 — Ahl, Arch. Naturges., band 89, abth. II,
 heft 5, 1923, p. 111, plate 1, fig. 1 (Takao,
 Canton, Hong Kong).

1696

Hymenocephalus papyraceus Jordan
and Gilbert

Hymenocephalus papyraceus Jordan
and Gilbert, Bull. U. S. Fish Comm.,
vol. 22, p. 614, fig., 1902 (Aug. 1904)
(type locality: Sagami Bay, Japan).
Jordan, Tanaka, Snyder, Journ.
College Sci., vol. 33, p. 412 (fig. 382
copied), 1913 (compiled). — Gilbert and

Hubbs, Proc. U. S. Nat. Mus., vol. 51, p.
745, 1916 (reference); Bull. U. S. Nat.
Mus., no. 100, vol. 1, p. (521) 539, 540,
1920 (reference).

Depth $7\frac{1}{5}$; head $5\frac{2}{5}$, width 2.
Snout $3\frac{3}{4}$ in head; eye 4, $1\frac{1}{4}$ across
snout, $1\frac{1}{8}$ in interorbital; preoral
profile vertical, length $3\frac{4}{5}$ in
head; maxillary reaches $\frac{1}{2}$ in eye,
length from front end 2 in head;
mandibular barbel minute, $\frac{1}{6}$ of eye;
teeth minute, in narrow villiform
bands, of 3 or 4 irregular series;

interorbital $3\frac{1}{8}$? in head, concave.
 Gill rakers $4 + 14$ low clavate
 spinescent tubercles on second
 arch, $\frac{1}{2}$ of gill filaments, which
 $\frac{1}{4}$ of eye.

Scales most all fallen and
 pockets indistinct, so squamation
 not made out; 2? above lateral
 line.

D. II, 9 - 114 ?, second simple
 ray slender, entire, length $1\frac{1}{2}$
 in head; interdorsal space $2\frac{1}{4}$?;
 A. 117 , fin height 3 in. head;
 pectoral rays I, 15, fin $1\frac{4}{5}$ in
 head; ventral rays I, 10, fin $1\frac{1}{8}$,
 first ray ending in filament.

Largely uniform brown, more
 or less minutely speckled with
 dark brown. Inside mouth and
 gill opening pale, with dark brown

407

Chaetodon lunulatus Droy and Gaimard,
Voy. Uranie, Zool., 1845, p. 381. Hawaiian
Islands.

Chaetodon biocellatus Cuvier, Hist. Nat. Poiss.,
vol. 7, 1831, p. ⁶²48. Qualan. — Lesson, Voy. Coquille,
Zool. ¹⁸³⁰ (1831), p. 176 (Qualan). — Guichenot,
Notes I. Reunion, vol. 2, 1863, p. 26. — van
Martens, Preuss. Exped. Ost Asien, 1876, p. 388
(Timboina). — Guimaraes, Jorn. Soc. Sci.
Lisboa, 1882, p. 31 (Mozambique).

→ Chaetodon fasciatus (non Forskäl) Kaup,
Arch. Naturges., band 26, abth. 1, 1860, p. 150.
— Day, Fishes of India, Suppl., 1888, p. 786
(note). — Day, Fauna British India, vol. 2,
1889, p. 8. — Weber, Siboga Exped., band 65,
1913, p. 304 (Musa Laut, Banda, Ki Islands,
Elat).

— Jordan and Evermann, Proc. U.S. Nat. Mus., no. 25,
¹⁹⁰³, p. 357 (Kotosho, Formosa, Honshu).
Tetragnathus (Chaetodontops) fasciatus
Bleeker, Atlas Ichth. Ind. Neerl., vol. 9,
1877, p. 41, plate (12) 374, fig. 1 (Java).

cloudings. Head below with dark and metallic tints. Breast dark coppery, with small dark median depression containing dark gray lens-like body. Walls of isthmus inside gill opening and side of chest with numerous parallel fine vertical striae. Chin and throat between mandibular rami with close set dark brown parallel fine transverse lines. Belly dark to neutral blackish. Fins pale, ventral bases blackish.

Japan.

U. S. N. M., No. 50935. Manazuru
Zaki, 26°, W. 6 miles, off Honshu.
In 120 to 265 fathoms. May 5, 1900.
Albatross Collection (D. 3697).

Length 147 mm. Type.

Elera, Cat. Fauna. Filip., vol. 1, 1895, p. 486
 (copied). — Ishikawa and Matsuura,
 Prelim. Cat. Fish. Mus. Tokyo, 1897, p. 53.
 — Pfeffer, Abt. lif. Fische, 1903, p. 8 (Kobotoni).
 — Gilchrist and Thompson, Ann. South Afr.
 Mus., vol. 6, pt. 3, 1909, p. 27 (Natal). —
Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 422
 (Irikawa, Misaki, Okume, Tanegashima). —
Ahl, Arch. Naturges., band 89, abth. A, heft 5,
 1923, p. 114 (Gilbert Island, Jaluit, Amboina,
 Mauritius, Mikindani, East Africa). —
McCulloch, Records Austral. Mus., vol. 14,
 no. 1, 1923, p. 4 (^{New Hebrides, Ambrym,} Two Isles, off Cape Bedford,
 Queensland). — Fowler, Proc. Acad. Nat. Sci.
 Phila., 1925, p. 251 (Natal). — Fowler, Bishop
 Mus. Bull., no. 22, 1925, p. 11 (Guam), p. 27
 (Honolulu), p. 33 (Samoa). — Fowler and
Ball, Bishop Mus. Bull., no. 26, 1925 (1926),
 p. 17 (Wabe Island).

1699

Hymenocephalus striatissimus Jordan and Gilbert

Hymenocephalus striatissimus Jordan
and Gilbert, Bull. U. S. Fish Comm.,
vol. 22, p. 612, fig., 1902 (Aug. 1904)
(type locality: Suruga Bay, Japan).
— Weber, Siboga Exped., vol. 57, p. 168,
1913 (Madura Sea; Makassar Straits;
Timor Sea; 289 to 520 meters). —

Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
vol. 51, p. (145) 187, 1916 (Eastern Sea;
off central Hondo; Suruga Gulf; 197 to
297 fathoms); Bull. U. S. Nat. Mus.,
no. 100, vol. 1, p. ⁽⁵²⁰⁾527, 1920 (Philippines).
— Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 5, p. 58, 1929
(Weber's materials).

Hymenocephalus striatissimus Jordan,
Tanaka, Snyder, Journ. College Sci.
Tokyo, vol. 33, p. 411 (fig. 381 copied),
1913 (compiled; error).

Hymenocephalus striatissimus
striatissimus Gilbert and Hubbs,
 Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
 529, 1920 (near Hong Kong; Formosa;
 south east of Luzon; 208 to 270 fathoms).

Hymenocephalus torvus Smith and Radcliffe,
 Proc. U. S. Nat. Mus., vol. 43, p. III, pl.
 23, fig. 3, 1912 (type locality: off south
 east Luzon, 201 fathoms).

Hymenocephalus striatissimus torvus
Gilbert and Hubbs, Bull. U. S. Nat. Mus.,
 no. 100, vol. 1, p. 530, 1920 (off southern Luzon;
 east Mindoro; west Bohol; between
 Marinduque - Luzon; north west Panay;
 south west Mindoro; Balayan Bay;
 between Cebu - Leyte; between Cebu - Bohol;
 north Mindanao; between Cebu - Siquijor;
 83 to 312 fathoms).

1701

Hymenocephalus striatissimus aeger
Gilbert and Hubbs, Bull. U. S. Nat.

Mus., no. 100, vol. 1, p. 531, fig. 32, 1920

(type locality: between Gillolo - Kayoa;
between Gillolo - Makyan; Sibuko Bay,
Borneo; 38 to 310 fathoms; Jolo; between
Jolo - Tawi Tawi; north Tawi Tawi;
186 to 318 fathoms).

Depth $7\frac{1}{5}$ to 8; head $5\frac{3}{4}$ to $5\frac{4}{5}$,
width $1\frac{3}{4}$ to $1\frac{4}{5}$. Snout $4\frac{1}{2}$ to $5\frac{1}{5}$
in head, $1\frac{1}{2}$ to 2 in eye; eye $2\frac{1}{2}$ to
 $3\frac{1}{8}$ in head; preoral length $5\frac{1}{5}$ to
 $5\frac{1}{2}$; maxillary reaches $\frac{3}{4}$ to $\frac{4}{5}$ in
eye, length from front end $1\frac{2}{3}$ to $1\frac{3}{4}$
in head; mandibular barbel feeble,
 $\frac{1}{4}$ of eye; teeth minute, in narrow
villiform bands in jaws, lower
narrower; interorbital $3\frac{1}{2}$ in head,
low, cavernous, irregularly concave.
Gill rakers 4 + 17 short clavate
spinescent tubercles on second arch,
 $\frac{2}{5}$ of gill filaments, which $\frac{1}{4}$ of eye.

Scales all fallen and pockets little distinct so squamation not made out; 4? above lateral line.

D. II, 8 or II, 9 — 120, second simple ray slender, length $1\frac{1}{5}$ to $1\frac{2}{5}$ in head; interorbital space $1\frac{2}{5}$ to $1\frac{3}{5}$; A. 110, fin height $2\frac{2}{3}$; pectoral fin rays I, 13, fin $1\frac{4}{5}$ in head, first ray filamentous.

Light brown. Sides of head and trunk silvery white. Under surface of head and belly grayish. Within gill opening outer faces of isthmus with numerous fine parallel close set vertical striae, over gray or coppery gray. Breast coppery and conspicuous round white blotch before each ventral fin base, last of which strongly contrasted blackish brown.

402

979 to 981, 1184, 1185. Port Matalvi.
November 23, 1908. Length 75 to 87 mm.

740 to 746, 748 to 750. Port Exon, west
of Pinas Island. December 17, 1908. Length
62 to 86 mm.

4733. Zainalasag Island, Masamal Bay.
June 12, 1909. Length 70 mm.

873. Ragay Bay. March 10, 1909. Length 55 mm.

20985. Rapurapu Island. June 22, 1909. Length
65 mm.

534 to 540, 1168 to 1170. San Juanico Strait.
April 13, 1908. Length 39 to 64 mm.

764, 765, 993. San Miguel Harbor, Ticao
Island. April 21, 1908. Length 64 to 68 mm.

807, 808, 4749. San Roque, Leyte Island.
July 29, 1909. Length 58 to 104 mm.

568, 569. Surigao, Mindanao. May 8, 1908.
Length 66 to 70 mm.

421 to 423, 463. Togean Bay, Trogian Island.
November 19, 1909. Length 50 to 60 mm.

Striated area from within gill opening also extended back on upper side of chest and then continuous over belly behind ventral fin bases. Median dark pit before ventral bases with small lens-like body. Black ring around vent. Fins all paler or lighter than body. Iris whitish or silvery.

East Indies, Philippines, Japan. A strongly marked species, easily known by its peculiar striated surfaces of the isthmus, sides of breast and belly, in combination with its contrasted coloration.

405

Chaetodon lunula (Lacépède).

Pomacentrus lunula Lacépède, Hist. nat. Poiss.,
vol. 4, 1803, pp. 507, 511, 513. No locality (on
Commerson).

Chaetodon lunula Cuvier, Hist. nat. Poiss., vol.
7, 1831, p. ~~45~~⁵⁹, plate 173 (East Indies, Mauritius,
Prince of Wales Island). — Bennett, Proc.
Comm. Zool. Soc. London, 1831, p. 61 (Mauritius).

— Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p.
25 (Prince's Island; ^{— Guichenot, Notend. Réunion, vol. 2, 1862, p. 25.} Ambonia). — Playfair,

Fishes of Zanzibar, 1866, p. 34 (Zanzibar). —

Capello, Journ. Soc. Sci. Lisboa, 1871, p. 200

(Mozambique). — Günther, Journ. Mus.

Godeffroy, band 2-3, ^{left} 5-6, 1874, p. 42, plate

33 (Hawaiian Islands). — Day, Fishes of

India, pt. 1, 1875, p. 108. — Peters, Monatsb.

Akad. Wiss. Berlin, 1876, p. 437 (Mauritius).

— Günther, Philos. Trans. Roy. Soc. London,

vol. 168, 1879, p. 470 (Rodriguez). —

U. S. N. M., No. 50934. Entrance
to Port Heda, N. 84° E. 1.2 miles, off
Honshu Island, Japan. In 167
fathoms. May 17, 1900. Albatross
Collection (D. 3738). Length 113 mm.
Type of Hymenocephalus striatissimus.
Also paratype, same data, 100 mm
long.

U. S. N. M., No. 72927. ~~Camp~~ Aderton
Jolo (Jolo), N. 77° E.,
Light, ~~Aderton Bay, 4.9 miles~~
(lat. ~~$6^{\circ} 00' 20''$ N.~~ $6^{\circ} 00' 20''$ N., long. ~~$120^{\circ} 45' 35''$ E.~~ $120^{\circ} 45' 35''$ E.),
Jolo Island.
~~Off northern entrance to In~~ ²³²
fathoms. ~~August 17,~~ September 17,
1909. Length

158 mm. Type of Hymenocephalus
Albatross Collection (D. 5548).
torus.

420

below, all sloping obliquely up and back and above that in darker brownish at bases of dorsals. Dorsals marginally deep brown, with submarginal pale line. Ventrals similar. Caudal with pale posterior margin, then broad deep brown submarginal transverse band and before parallel pale diffuse band; base of fin deep brown. Paired fins dull brown.

Greatly resembles *Chaetodon lunula*, but without the dark markings on the back, along the bases of the dorsals and caudal peduncle. In the young the black blotch is present in the postero-medial dorsal area over their outer portion and but little smaller than eye. Also its caudal with terminal half pale.

U. S. N. M., No. 77236.

1705

Albatross Collection (D. 4967). Length
128 to 155 mm. 8 examples.

U. S. N. M., No. 77237.

Albatross Collection (D. 5059). Length
162 mm.

U. S. N. M., No. 77238.

Albatross Collection (D. 4966). Length
168 mm.

U. S. N. M., No. 77239.

Albatross Collection (D. 4897). Length
157 mm.

404

Chaetodon peluensis Kner.

Chaetodon peluensis Kner, Sitzb. Akad. Wiss. Wien, band 57, heft 11, 1868, p. 308. Pelu Islands.
— Günther, Journ. Mus. Godeffroy, band 2-3
heft 5-6, 1874, p. 43, plate 31, fig. 13 (Pelu
Islands, Samoa, Society Islands, Paumotu,
— Fowler and Silverster, Marine Boff. Carnegie Inst., 1922, p. 123 (Pago Pago).
New Hebrides). — Fowler, Bishop Mus. Bull.,
no. 22, 1925, p. 12 (Guam).

Chaetodon germanus De Vis, Proc. Linn. Soc. New
South Wales, vol. 9, 1884, p. 454. Queensland.

Pale vertical bar through eye down to cheek
medially, edges dark. Black blotch close
before spinous dorsal. Body with 8 oblique
dusky brown bands, anteriorly on trunk broken
as dark spots. Black submarginal line on
dorsal and anal, latter wider. Black crescent
on caudal.

52196 U. S. N. M. Apia, Samoa. Bureau of
Fishes. 4 examples.

U. S. N. M., No. 78228. Makyan
Island (S.), N. 54° W., 3 miles (lat.
 $0^{\circ}15'00''$ N., long. $127^{\circ}24'35''$ E.),
between Gillolo and Makyan
Islands. In 298 fathoms. November
28, 1909. Albatross Collection (D. 5621).
Length 142 mm. Type of
Hymenocephalus striatissimus
adgeri.

403
8672. Jinta Bay, Jolo Island, second anchorage. September 19, 1909. Length 87 mm.

1056 and 16076. Ulugan Bay, Oyster Inlet. December 28, 1908. Length 75 to 77 mm.

4736 and 4737. Ulugan Bay, Palawan. December 28, 1908. Length 80 to 84 mm.

512. Ulugan Bay near Rita Island. December 27, 1908. Length 78 mm.

428. Gane Road, Sillolo Island, Dutch East Indies. December 1, 1909. Length 39 mm.

474. Dodepo and Pasejogo Islands, Celebes. November 16, 1909. Length 75 mm.

20805. Labuandata Bay, Gulf of Boni, Celebes. December 18, 1909. Length 66 mm.

55969 U.S.N.M. Bacon, Philippines. Bureau of Fisheries. Length 80 mm. [3894].

1707

Hymenocephalus striatulus Gilbert

Hymenocephalus striatulus Gilbert,
Bull. U. S. Fish Comm., vol. 23, pt. 2,
p. 665, fig. 259, 1903 (1905) (type
locality: off south west Oahu,
192 to 352 fathoms; Kauai, 55 to
362 fathoms). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 145,
1916 (reference); Bull. U. S. Nat.
Mus., No. 100, vol. 1, p. 521, 1920
(diagnosis in key). — Fowler, Mem.

Bishop Mus., vol. 10, p. 87, 1928
(Hawaiian Islands).

Depth 7 to $7\frac{2}{5}$; head $4\frac{4}{5}$ to $5\frac{1}{5}$,
width 2. Snout to eye $3\frac{1}{2}$ to $3\frac{4}{5}$
in head, $1\frac{1}{5}$ to $1\frac{1}{3}$ in orbit; eye
 $3\frac{1}{3}$ to $3\frac{3}{5}$ in head, 1 in snout, 1
to $1\frac{1}{8}$ times interorbital; orbit 3
in head; preoral profile oblique,
length $5\frac{1}{3}$ to $5\frac{1}{2}$; maxillary reaches
opposite hind edge of orbit, length

from front end $1\frac{4}{5}$ to 2 in head; no barbel; teeth minute, in narrow bands in jaws, lower band narrower; interorbital $3\frac{1}{5}$ to 4 in head, low, depressed irregularly. Gill rakers $5+19$ short clavate spinuliferous tubercles on second arch, $\frac{1}{2}$ of gill filaments, which $\frac{1}{4}$ of orbit.

Scales (pockets) 68 in lateral line; 4 above, 5 below, 8 predorsal forward opposite hind eye edge. Scales with 13 or 14 irregular series of short apical spinules, last not reaching beyond scale edge; circuli moderate, complete.

D: II, 9 to II, 11—70, second simple ray entire, slender, $1\frac{2}{5}$ in head; interdorsal space

439

Chaetodon aureus (non Bloch) Schlegel,
Faun. Japonica, Poiss., dec. 5-6, 1844,

p. 81, plate 42, fig. 1 (Nagasaki). —

Richardson, Ichth. China Jap., 1846, p.
246 (copied). — Günther, Cat. Fish. Brit.
Mus., vol. 2, 1860, p. 29 (copied). —

Károli, Termesz. Füzetek, Budapest, vol.
5, 1881, p. 155 (Canton). — Ishikawa and
Matsuura, Prelim. Cat. Fish. Mus. Tokyo,
1897, p. 52. — Seale, Philippine Journ. Sci.,
vol. 9, 1914, p. 71 (Hong Kong).

Chaetodon viridis Bleeker, Nat. Gen. Arch.
Keddel. Indië, deel 2, 1845, p. 520, Batavia.

Chaetodon praetextatus Cantor, Journ. Asiatic
Soc. Bengal (Cat. Malay. Fish.), vol. 8, pt. 1,
1849 (1850), p. 156, plate 3. Pinang. — Günther,
Cat. Fish. Brit. Mus., vol. 2, 1860, p. 22
(types). — Day, Fishes of Malabar, 1866,
p. 31. — Jordan and Evermann, Proc. U. S. Nat.
Mus., vol. 25, 1903, p. 356 (Formosa).

$1\frac{1}{2}$ to $1\frac{2}{3}$; A. 80, fin height $3\frac{1}{5}$ to $3\frac{1}{2}$; pectoral rays I, 14 or I, 15, fin $1\frac{3}{5}$ to $1\frac{3}{4}$ in head; ventral I, 13 or I, 14, fin $1\frac{1}{5}$ to $1\frac{1}{4}$, first ray ending in filament.

Brown, with gray over abdomen and neutral black on mandible below, breast, chest and belly. Head posteriorly on sides, trunk and tail, with numerous scattered dark dots or specks. Silvery or silver gray tints on lower side of trunk. Iris gray or silver gray. Inside mouth pale or with gray. Inside gill opening pale or whitish, with only some dark gray tints marginally or above. Fins pale or lighter than body.

Boulenger, Proc. Zool. Soc. London, 1887, p. 657 (Muscat, Arabia). — Jordan and Fowler, Proc. U. S. Nat. Mus., vol. 25, 1902, p. 534, fig. 3 (Tokyo, Ikumae). — Franz, Abhand. K. Bayer. Akad. Wiss., band 4, suppl. band 1, 1910, p. 49 (Yokohama). — Snyder, Proc. U. S. Nat. Mus., vol. 42, 1912, p. 422 (Kagoshima). — Jugmayer, Abhand. K. Bayer. Akad. Wiss., band 26, abth. 6, 1913, p. 11 (Oman). — Seale, Philippine Journ. Sci., vol. 9, 1914, p. 72 (Hong Kong).

Citharoedus collaris Kaup, Arch. Naturg., abth. 1, 1860, p. 144.

Tetragnopterus collaris Bleeker, Ned. Tijds. Dierk., deel 4, 1873, p. 140 (China).

Tetragnopterus (Chaetodontops) collaris Bleeker, Atlas Ichth. Ind. Néerl., vol. 9, 1877, p. 42, plate (11) 373, fig. 2 (Sumatra, Nias, Pinang, Java, Celebes).

Hawaiian Islands. A slender, trim, compact species, with rather obscure pale coloration.

U. S. N. M., No. 51611. Barber's Point Light, N. 82° , E. $7.2'$, south west coast of Oahu. In 192 to 352 fathoms. July 26, 1902.

Albatross Collection (D. 4122).

Length 140 mm. Type of Hymenocephalus striatulus.

U. S. N. M., No. 51683.

Albatross Collection.

Length 67 to 124 mm. 9 examples.

U. S. N. M., 2 examples. Lat. $21^{\circ}13'$ N., long. $157^{\circ}43'37''$ W., Hawaiian Islands. In 310 fathoms. December 3, 1891. Albatross Collection (D. 3467). Length 77 to 125 mm.

Chaetodon collaris Bloch.

437

Chaetodon collaris Bloch, Naturg. Ansl.

Fisch., band 3, 1787, p. 116, plate 216, fig. 1.

Japan — Gmelin, Syst. Nat. Linn., 1789, p.

1263 (Japan). — Walbaum, Arted. Pisc.,

vol. 3, 1792, p. 424 (copied). — Forster, Fauna

Indica, 1795, p. 15. — Schneider, Syst.

Ichth. Bloch, 1801, p. 223 (Japan). — Lacépède,

Hist. Nat. Poiss., vol. 4, 1802, pp. 460, 491

(Japan). — Cuvier, Hist. Nat. Poiss., vol. 7,

1831, p. ⁵³~~51~~ (copied). — Uhl, Arch. Naturg.,

band 89, abth. 2, heft 5, 1923, p. 135 (Japan).

Chaetodon collaris Bonnaterre, Tabl. Ichth., 1788,

p. 86 (Japan).

Chaetodon collaris Günther, Cat. Fish. Brit.

Mus., vol. 2, 1860, p. 21 (Japan?). — Kner,

Reise Novara, Fische, 1865, p. 99 (Java). —

Günther, Journ. Mus. Godeffroy, band 2-3, ^{heft} 5-6,

1874, p. 40, ~~plate 131, fig. 6 (Pseudotodon)~~. —
(part)

1711

Hymenocephalus tenuis Gilbert and Hubbs

Hymenocephalus tenuis (Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 54, p. 173, 1917
(type locality: off southern Oahu, 265
to 280 fathoms); Bull. U. S. Nat. Mus.,
no. 100, vol. 1, p. 519 (520), 1920 (reference).

Hymenocephalus striatulus (part) Gilbert,
Bull. U. S. Fish Comm., vol. 23, pt. 2,
p. 665, 1903 (1905) (~~Lat. 19° 52' S., long. 140°~~
~~W., Line Islands Society Islands, 284~~
~~fathoms~~). Diamond Head Light, N. 74°, E.
8. 9', south coast of Oahu, 265 to 280
fathoms).

U.S.N.M., No. 78177. Diamond
Head Light, N. 74° , E. 8.9', south
coast of Oahu. In 265 to 280 fathoms.
May 6, 1902. Albatross Collection
(D. 3920). Length 75 mm. Type.

435

570. Surigao, Mindanao. May 8, 1908.
Length 110 mm.

642, 796, 19437. Taganak Island.
January 7, 1909. Length 123 to 140 mm.

6 examples. Talissi Island. November 8,
1908. Length 20 to 22 mm.

458, 484. Talissi Island. November 9,
1909. Length 110 to 135 mm.

899. Tapanzana. September 13, 1909.
Length 125 mm.

3880. Tara Island. December 14, 1908.
Length 140 mm.

587, 805 [807]. Tara Island. December 15,
1908. Length 130 to 132 mm.

10374. Tilig, Lubang Island. July 15, 1908.
Length 106 mm.

415, 464. Tugcan Bay, Tugian Island.
November 19, 1909. Length 58 to 73 mm.

1065 to 1070. Zamindao Island, southern
Luzon. February 26, 1908. Length 88 to 127 mm.

1713

Genus Malacocephalus Günther

Malacocephalus Günther, Cat. Fishes
Brit. Mus., vol. 4, p. 396, 1862.

(Type Macurus laevis Lowe, monotypic)

Body compressed, with short trunk and slender tapering tail. Head moderate. Snout short, obtuse, obliquely truncate. Mouth terminal, inferior, wide, upper jaw less than $\frac{1}{3}$ of head. Upper teeth biserial, lower uniserial. Mandibular barbel present. No prominent ridges on head, muciferous cavities wide. Gill membranes broadly united, free from isthmus. Gills 4, slit behind fourth. Gill rakers tubercular, less than 15. No pseudobranchiae. Branchiostegals 7. Pyloric coeca very numerous, greatly branched. Scales small or minute, bristly, ^{or} ctenoid, much deeper than long. Whole head scaly. Lateral line begins at upper angle of gill opening. First dorsal over pectoral origin, longest

1714

spine-like ray smooth. Dorsals usually widely separated. Anal more developed than second dorsal. Pectoral short, high, opposite upper angle of gill opening. Vent well before anal fin, at end of naked oval which separated by narrow scaly stripe of skin from similar naked area below ventral fin bases, though both naked areas wanting in young.

Species few, tropical or subtropical.

1715

Malacocephalus hawaiiensis Gilbert

Malacocephalus hawaiiensis Gilbert, Bull. U. S. Fish Comm., vol. 23, pt. 2, p. 677, fig. 265, 1903 (1905) (type locality: off south coast of Oahu; Pailolo Channel; Bird Island; Kauai; Maui; north west Oahu; 165 to 684 fathoms). — Gilbert

and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 542, 1920 (measurements of paratypes). — Fowler,

Mem. Bishop Mus., vol. 10, p. 87, 1928 (Hawaiian Islands).

Malacocephalus laevis (not Linnaeus) Gilbert and Cramer, Proc. U. S. Nat. Mus., vol. 19, p. 432, 1897 (Hawaiian Islands, 295 to 351 fathoms).

1716

Depth 7 to $7\frac{1}{5}$; head 5 to 6,
width $1\frac{3}{4}$ to $1\frac{7}{8}$. Snout to eye
 $3\frac{1}{2}$ to 4 in head; eye $3\frac{1}{8}$, $1\frac{1}{8}$
in snout, $1\frac{1}{8}$ in interorbital;
orbit $3\frac{1}{4}$ in head, $1\frac{1}{8}$ in snout,
 $1\frac{1}{8}$ in interorbital; maxillary
reaches $\frac{3}{4}$ to $\frac{4}{5}$ in eye, length
from front end 2 to $2\frac{1}{8}$ in head;
preoral vertically oblique in
profile, length 4 to 5 in head;
mandibular barbel $1\frac{1}{4}$ to $1\frac{2}{5}$ in
eye; teeth in villiform bands in
jaws, each with strong outer
row of curved or enlarged canines;
interorbital $3\frac{1}{4}$ to $3\frac{1}{2}$ in head,
low, widely or slightly convex.
Gill rakers 2 + 7 short knobs
on second arch, $\frac{1}{3}$ of gill filaments,
which $\frac{1}{2}$ of eye.

7981. Ubi, Bourie Island, Dutch East Indies. December 2, 1909. Length 114 mm.

21123. Cape Kait, Libani Bay, Celebes. December 29, 1909. Length 48 mm.

4739. Limbe Strait, Celebes. November 10, 1909. Length 106 mm.

4836. Tidore Island, south of Ternate. November 25, 1909. Length 75 mm.

43933 U.S.N.M. Mauritius. Colonel Nicholas Pike. Length 94 to 115 mm. 3 examples.

45090 U.S.N.M. Samoa. S. G. Whitmee. Length $8\frac{1}{2}$ to $9\frac{5}{8}$ mm. 2 examples.

65790 U.S.N.M. Jaluit, Marshall Islands. Albatross Collection. Length 85 to 106 mm. 5 examples.

1717

Scales 285? in lateral line to end of broken tail, of which 25 forward of vent; 15 above, 47 below, 58 predorsal. Scales adherent, finely denticulate or velvety to touch, equally large on head as on body. Scales with rather large patch of irregular though numerous small spines; circuli moderate.

D. II, 11 or II, 12. — 190? (to end of broken tail), second simple ray slender, smooth, $1\frac{2}{5}$ to $1\frac{4}{5}$ in head; interdorsal space $1\frac{1}{3}$ to $1\frac{3}{4}$; A. 194 (to end of broken tail), fin rather low though nearly twice high as very low-second dorsal; pectoral rays I, 18 or I, 19, fin 2 to $2\frac{1}{4}$ in head; ventral rays I, 8, fin (damaged) $2\frac{4}{5}$ to $3\frac{7}{8}$.

front of snout and vent dusky.
Caudal bright lemon yellow,
tip margined with dusky hyaline
about width of pupil. Caudal peduncle
posteriorly with whitish bar. Pectoral
dusky hyaline. Ventral slaty.

1023 and 3637. Ternabal Island.
September 18, 1909. Length 88 to 93 mm.

Brown, sides of head and
costal region with slight silvery
tint. Iris pale or brassy. Inside
mouth brown and gill opening
blackish. Fins brownish,
ventrals little darker and like
dark neutral tint of breast and
belly below.

Hawaiian Islands.

yellowish olive on vertical band
 covering area from second dorsal
 across opercle and including pectoral
 base to ventral; another similar area
 before middle of side, posterior half
 ochraceous, alternating and between
 lighter dusky areas; center of each
 scale with gray spot, forming indefinite
 lines curving down. ^{little narrower than eye,} Ocular band,
 purplish black above and reaching first
 dorsal spine, below eye seal brown;
 joins on middle of breast and continued
 to include ventral base. Interorbital
 region lighter than ocular band and
 snout tip dark purplish. Dorsal body
 color, shading to dusky lemon yellow
 on edge of soft fin; entire edge of
 soft fin narrowly edged with white
 and submarginal black line. Anal
 ochraceous, margined as soft dorsal,

U. S. N. M., Nos. 49519, to 49521.
Lat. $21^{\circ}12'N.$, long. $157^{\circ}49'W.$,
Hawaiian Islands. In 295 fathoms.
December 4, 1891. Albatross
Collection (D. 3472). Length 320 to
590 mm. 4 examples.

U. S. N. M., No. 51618. Diamond
Head Light, N. 23° , E. $9.6'$, south
coast of Oahu. In 304 to 315 fathoms.
May 5, 1902. Albatross Collection
(D. 3907). Length 365 mm, to end
of broken tail. Type.

U. S. N. M., No. 51707.

Length 247 to 390 mm. 16 examples.

485
3920. Port San Pio Quinto, Camiguin Island. November 10, 1908. Length 84 mm.

934. Pugada Bay. May 15, 1908. Length 85 mm.

1126 and 11262. Refugio Island, Pasacao. March 9, 1909. Length 124 to 129 mm.

597 and 578, ⁴⁷⁷⁶ Hilino Island. August 10, 1909. Length 112 to 120 mm.

4771 ~~and 4772~~ Simonor Island. February 24, 1908. Length 106 mm.

4772. Simonor Island. February 26, 1908. Length 88 mm.

A448. Vitarki wharf. February 26, 1908. Length 108 mm.

14406. Talissi Island. November 9, 1909. Length 81 mm.

19229. Tapiantana Island. September 13, 1909. Length 194 mm.

490 to 496 [283]. Tataan, Jawi Jawi. February 21, 1908. Length 88 to 110 mm.

1720

Malacocephalus laevis (Lowe)

Macrurus laevis Lowe, Proc. Zool. Soc. London, p. 92, 1843 (type locality: Madeira). — Johnson, Ann. Mag. Nat. Hist., ser. 3, vol. 10, p. 171, 1862 (Madeira).

Macrurus laevis Günther, Rep. Voy. Challenger, vol. 22, p. 148, pl. 39, fig. 6, 1887 (off Pernambuco, 350 fathoms). — Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 8, p. 123, 1891 (Laccadive Sea, 188 to 220 fathoms). — Smith, Scandinavian Fishes, vol. 2, p. 593, fig. 141, 1895 (Skaw - Lysekil [dropped by seagull on shore]).

Macrurus laevis Köhler, Ann. Univ. Lyon, vol. 26, p. 492, 1896 (Gulf of Gascony, 400 to 700 meters).

1721

Macrurus (Malacocephalus) laevis
Alcock, Cat. Deep Sea Fishes Ind.
Mus., p. 119, 1899 (Andaman Sea;
Arabian Sea; 188 to 719 fathoms). —
Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, p. 270 (391), 1906 (Bengal Bay;
east coast Africa; 362 to 977 meters).

— Murray and Hjort, Depths of the
Ocean, p. 398, 1912 (off Morocco, 535
meters).

Malacocephalus laevis Günther, Cat.
Fishes Brit. Mus., vol. 4, p. 397, 1862
(type; Madania). — Moreau, Poiss.
France, vol. 3, p. 284, 1881 (Nice). —
Hilgendorf, Archiv Naturg., p. 211, 1889
(Azores). — Carus, Prodr. Medit., vol.
2, p. 583, 1893 (compiled). — Goode
and Bean, Oceanic Ichth., p. 415, 1895
(copied). — Garman, Mem. Mus. Comp.
Zool., vol. 24, p. 395, 1899 (reference).
— Weber, Siboga Exped., vol. 57, p. 166,
1913 (Flores Sea; Macassar Strait;
Molucca Strait; 397 to 694 meters).

1722

— Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
vol. 51, p. 145, 1916 (reference); Bull. U.
S. Nat. Mus., no. 100, vol. 1, p. 543, 1920
(note). — Barnard, Ann. South African

Mus., vol. 21, pt. 1, p. 344, June 1925
(off Cape Point and East London, 250 to
450 fathoms). — Waite, Rec. South
Austral. Mus., vol. 3, p. 229, 1927 (Great
Australian Bight). — McCulloch,
Austral. Mus. Mem., vol. 5, pt. 1, p.
126, June 29, 1929 (compiled). — Weber
and Beaufort, Fishes Indo Austral.
Archip., vol. 5, p. 62, fig. 13, 1929
(Weber's material).

1723

Malacocephalus luzonensis Gilbert and Hubbs

Malacocephalus luzonensis Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 541,
fig. 35, 1920 (type locality: off western
Luzon; southern Luzon; eastern Luzon;
172 to 270 fathoms).

1724

Genus Ventrifossa Gilbert and Hubbs

Ventrifossa Gilbert and Hubbs, Bull. U.S. Nat. Mus., no. 100, vol. 1, p. 543, 1920. (Type Coryphaenoides garmani (544), Jordan and Gilbert, orthotypic.)

Atherodus Gilbert and Hubbs, Bull. U.S. Nat. Mus., no. 100, vol. 1, p. 544, 1920. (Type Optonurus atherodon Gilbert and Cramer, orthotypic.)

Lucigadella Gilbert and Hubbs, Bull. U.S. Nat. Mus., no. 100, vol. 1, p. 544 (552), 1920. (Type Macrourus nigromarginatus Smith and Radcliffe, orthotypic.)

Lucigadus Gilbert and Hubbs, Bull. U.S. Nat. Mus., no. 100, vol. 1, p. 545 (553), 1920. (Type Macrourus lucifer Smith and Radcliffe, orthotypic.)

Body compressed. Head moderate, compressed. Snout short, broadly triangular as seen above, front profile subvertical and not projecting much before front border of mouth, without enlarged median or lateral tubercles. Eye advanced, circular or slightly oval. Mouth rather large, subterminal, upper jaw more than $\frac{1}{3}$ of head, reaches to middle of or behind eye. Mandibular barbel present. Villiform teeth in bands in jaws, outer upper row more or less enlarged. Gill membranes united below orbit, scarcely joined to isthmus. Gill rakers 13 to 15 short spinescent tubercles on second arch. Branchiostegals

414. Togean Bay, Togiean Island.
November 19, 1909. Length 108 mm.

6947 and 6949. West coast of Sabtan
Island. November 8, 1908. Length 200 to 212
mm.

12789. Limbe Strait, Celebes. November
10, 1909. Length 92 mm.

A1044 and A1053. Tidore Island, south
of Ternate. November 24, 1909. Length 199 to
205 mm.

4688, 4689, 4692. Lipra Bay, Guana.
November 19-20, 1907. Length 71 to 135 mm.

52503 U.S.N.M. Apia, Samoa. Bureau
of Fisheries. Length 70 to 170 mm. 9 examples.

30589 U.S.N.M. New Guinea. Australian
Museum. Length 155 to 175 mm. 2 examples.

62358 U.S.N.M. Honolulu. Dr. D. V. Jordan,
1908.

83289 U.S.N.M. No locality, probably Hawaiian?
Wilkes Exploring Expedition. Length 25 mm.

1726

7, rarely 6. Scales imbricate,
covered with spinules, arranged
in parallel rows or quincunx
order. Two lens like organs,
front one before ventrals and
posterior larger in naked area
immediately before vent, present
or not. Lateral canal system
well developed. First dorsal,
pectoral and ventral, nearly
in same vertical. Second simple
ray of first dorsal fin with
strong or obsolete row of spinules
along its front edge. Anal
origin below end of first dorsal.

Tropical and subtropical
deep seas.

ray and bar downward on vertical edge orange, set off from black by yellow; vertical edge with hyaline band becoming white below, defined by black on each side. Anal broadly olive basally, extreme tip dark and brown yellow band wide as pupil submarginal, below gray, black, orange, red, black, gray and yellow, colors most definite about center of soft part and continued down vertical edge, all but orange lost on spinous portion. Caudal hyaline white, tip crescentic orange bar, edges cadmium and rays with fine black lines. Pectoral hyaline, rays with narrow black lines. Ventral bright sulphur yellow.

4722 and 12906. Toba Island. December 14, 1909. Length 92 to 101 mm.

{ 498 and 4966. Tatan, Tawi Tawi. February 21, 1908. Length 148 to 180 mm.

Ventrifossa ctenomelas (Gilbert and Cramer)¹⁷²⁷

Chalinura ctenomelas (Gilbert and Cramer,
Proc. U. S. Nat. Mus., vol. 19, p. 430,
pl. 45, fig. 2, 1897 (type locality :
Hawaiian Islands, 295 to 343 fathoms).
— Garman, Mem. Mus. Comp. Zool.,
vol. 24, p. 395, 1899 (reference). —

Gilbert, Bull. U. S. Fish Comm., vol.
23, pt. 2, p. 662, 1903 (1905) (Pailolo
Channel; off south Oahu; Kauai; Maui;
192 to 368 fathoms).

Macrurus (Chalinura) ctenomelas Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
p. 390, 1906 (reference).

Lionurus ctenomelas (Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 145, 1915
(reference).

Ventrifossa ctenomelas (Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 544, 1920
(diagnosis in key). — Fowler, Mem. Bishop
Mus., vol. 10, pt. 87, 1928 (Hawaiian Islands).

1728

Depth 5 to 7; head 5 to $5\frac{1}{2}$, width 2 to $2\frac{1}{8}$. Snout to eye $3\frac{1}{5}$ to $3\frac{1}{3}$ in head; eye 4, $1\frac{1}{8}$ to $1\frac{1}{5}$ in snout, slightly greater than interorbital; orbit $3\frac{1}{8}$ to $3\frac{1}{3}$ in head, $1\frac{1}{5}$ times snout, $1\frac{1}{5}$ to $1\frac{1}{2}$ times interorbital; preoral length short, $1\frac{2}{3}$ to $2\frac{1}{4}$ in orbit; mandibular barbel $3\frac{3}{5}$ to 4 in head; teeth above in villiform band of 4 or 5 irregular rows and outer enlarged row, below in narrow band of 2 or 3 close set irregular rows, of which larger ones intermixed; interorbital $4\frac{1}{2}$ to $4\frac{3}{5}$ in head, low, nearly level. Gill rakers 2 + 13 low spinose tubercles on second arch, $\frac{1}{2}$ of gill filaments, which $3\frac{1}{2}$ in orbit.

showing as very narrow dusky stripe above eye and short blotch in lower orbit. On lower side about 6 pale lilac stripes half pupil width, narrower than interspaces. Before eye, except small lavender area, snout and lower head bright cadmium orange, continued across belly as median sulphur yellow indistinct stripe. Purplish bar down shoulder under opercular flap, continued as cadmium orange across pectoral base and in axil. Large jet black blotch occupies most of dorsal posteriorly, reaching slightly below level of caudal peduncle and forward to seventh spine; defining blotch below crossed white band width of eye. Tips of dorsal spines bright sulphur yellow, below-membranes pale; produced dorsal

1729

Scales 150 in lateral line to
pseudocaudal; 11 above, 19 or 20?
below, 47? predorsal forward
to front of snout of which 25
forward opposite hind edge of
orbit. Scales with 20 irregular
parallel horizontal rows of long
slender spinules, last well
extended beyond hind scale edge;
circuli moderate, complete.

D. II, 10 or II, 11—144, second simple
ray slender, with row of fine close-
set antorse spinules along front
edge, length $1\frac{1}{3}$ to $1\frac{2}{3}$ in head;
interdorsal space $1\frac{3}{4}$ to $1\frac{4}{5}$;
A. 138, fin height $4\frac{1}{8}$ to 5; pectoral
rays I, 21, fin $1\frac{2}{3}$ to 2 in head;
ventral rays I, 6 or I, 7, fin $2\frac{3}{4}$ to
 $3\frac{1}{8}$ in head.

301

Pectoral dusky hyaline. Ventral
lemon yellow.

10387 and 10389. Port Gurnelo, Luzon.
July 13, 1908. Length 157 mm.

7036 and 7047. Fort San Pio Quinto,
Carriguin Island. November 10, 1908.
Length 192 to 222 mm.

8781. Tinalasag Island. June 12, 1909.
Length 171 mm.

651. Rapurapur. June 22, 1909. Length
140 mm.

6908 and 6909. Santo Domingo, Batan.
November 7, 1908. Length 202 to 217 mm.

7853. Tayanata Island. January 7, 1909.
Length 195 mm.

877 to 879 [189, 190]. Tataan, Simabuc
Island. February 20, 1908. Length 133 to
140 mm. Yellowish olive green above
and anteriorly, shading lavender in
head. Dorsal bar almost obsolete

Brown, with silvery white tints along lower side, line of demarcation from back distinct. Iris gray to whitish. Mandible below, branchiostegal region, chest, breast and belly more or less neutral black. Inside mouth pale or light. Inside gill opening blackish brown, deep inside whitish. Fins more or less brown, darker terminally and ventrals nearly blackish.

Hawaiian Islands. Characteristic is the dark brown coloration with overlaid grayish to whitish silvery reflections of the lower half of the body. Though the chest and belly often blackish they also frequently show a coppery or even grayish tint. Snout short,

pectoral base. Snout, lower head and breast minimum orange to sulphur below. Tips of dorsal spines pale lemon, color continued on rays and on produced rays; edge of vertical portion of soft dorsal black resting on inframarginal bar of hyaline white near third diameter of pupil; below this very narrow black line and broad dusky scarlet orange bar which extends triangularly into produced portion and well along lower half of produced rays. Anal whitish on basal portion, spines and edge of soft fin bright yellow with narrow submarginal orange bar. Caudal base scarlet, color extending forward on lower portion of caudal peduncle and as orange along caudal edges, tip or edge of fin orange and rays with narrow black line each side.

obtuse and fins in young often
pale with dark or dusky.
subterminal area on first dorsal.
U. S. N. M., No. 47704.

Albatross Collection (D. 3470). Length
194 mm. Type.
U. S. N. M., No. 47713.

Albatross Collection (D. 3472). Length
120 to 190 mm. 3 examples.
U. S. N. M., No. 55237.

Length 120 to 297 mm. 10 examples.

299

9019. Langa Point, Luzon. June 24,
1909. Length 167 mm.

6026 and 6027. Little Santa Cruz Island.
May 28, 1908. Length 200 to 205 mm.

4739. Maricabun Island, Luzon.
January 20, 1908. Length 200 mm.

6237, 6238, 6274. Mexico Island, Galera
Bay, Mindoro. June 9, 1908. Length 195 to 220 mm.

8059. Mompoy Island, Anabayan Island.
March 3, 1909. Length 216 to 222 mm. 2 examples.

8880 and 8881. Near Palay Bay, Luzon.
June 16, 1909. Length 186 to 195 mm.

7328 and 7329. Pandan Island near
Sablan Bay, Mindoro. December 12, 1908.
Length 185 to 195 mm. Back anteriorly
greenish yellow, horizontal stripes below
pale purple, not continued to anal base.
Pale purple in bar above pectoral base
and blotch under eye. Very short black
ocular bar above eye. Orange bar at

U. S. N. M., no. 55238.

1732

Length 137 to 258 mm. 23 examples.

U. S. N. M., no. 55239.

Length 203 to 260 mm. 3 examples.

298

8947. Between Paron and Jesus Points,
Albany Gulf, Luzon. June 21, 1909.

Length 176 mm.

8349. Buang Bay, Talajik Island.
March 15, 1909. Length 220 mm.

A585. Busbut Point, Siasi Island.
September 20, 1909. Length 196 mm.

9658. Cagayan, Sulu Island. January 8,
1909. Length 150 mm.

1247. Candaranan Island. January 4,
1909. Length 132 mm.

1024. Papanyuyan Point. May 10, 1908.
Length 143 mm.

450. Ilocos Island. January 7, 1910.
Length 129 mm.

12483. Endeavor Strait. December 23, 1908.
Length 172 mm.

225. Endeavor Strait. December 24, 1909.
Length 152 mm.

19789. Gomomo Island. December 3, 1909. Length 97 mm.

1733

Ventrifossa divergens Gilbert and Hubbs

Ventrifossa divergens Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p.
(544) 549, fig. 37, 1920 (type locality:
Sibuko Bay, Borneo; China Sea near
Hong Kong; north Luzon; north west
Palau; south west Luzon; east Luzon;
between Gillolo - Makyan; 100 to 422
fathoms). — Barnard, Ann. South

African Mus., vol. 21, pt. 1, p. 346, June
1925 (off East London, 540 to 720 meters).

— Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 6, p. 69, 1929
(compiled).

Depth $6\frac{1}{4}$; head $5\frac{3}{5}$, width $2\frac{1}{10}$.
Snout $3\frac{3}{4}$ in head; eye $3\frac{3}{4}$, subequal
with snout or interorbital; maxillary
reaches $\frac{4}{5}$ in eye, length from front
end $2\frac{1}{5}$ in head; mandibular
barbel slender, length $3\frac{4}{5}$; teeth
minute, uniform, simple, villiform,

of 8 irregular series above and 3 or 4 below; preoral length $1\frac{4}{5}$ in eye; interorbital $4\frac{1}{5}$ in head, low, nearly level. Gill rakers $2 + 13$ to 15 short robust knobs on second arch, $2\frac{2}{5}$ of gill filaments, which 3 in eye.

Scales 175 in lateral line, of which 4 or 5 in advance of vent; 8 above, 18 below, $4\frac{1}{2}$ predorsal. Scales rather firmly adherent, large on cheek as on body, small and finely bristly on muzzle and lower surface of head. Scales without striae, apically with quincunx area of fine spinules; circuli fine.

297
ish streak from above down through
eye and fading on cheeks below. Obscure
brownish line from fourth dorsal
spine nearly to pectoral origin.
Posterior half of back up over squam-
ation of spinous dorsal posteriorly
and all of greater basal portion of
soft dorsal black; in both areas
broadly bordered whitish, also border
forms in outer portion of soft dorsal
which pale, edge of which with black-
ish line and also another submarginal.
Soft anal broadly bordered white,
though with brownish submarginal line
only in smaller examples. Caudal
with pale border all around, median
rays with brownish. Paired fins pale
below.

Cocos Islands, East Indies, Melanesia,
Polynesia. Known among all chaetodonts
by the striking and contrasted black
of the back posteriorly. It presents
little variation.

D. II, 9 to II, 11 — 140, front edge of second simple ray finely denticulate, length $1\frac{2}{5}$ in head; interdorsal space $1\frac{4}{5}$; A. 143, front rays highest and fin much higher than second dorsal; no pseudocaudal; pectoral I, 18 to I, 22, fin $1\frac{2}{5}$ in head; ventral rays I, 7 to I, 8, fin $2\frac{1}{4}$ in head, first ray ending in short filament.

Pale brown generally, with silvery to pale leaden gray tints on sides of head and body. Under surface of head, breast and belly dark neutral gray to blackish. Iris pale gray. Inside mouth white, inside gill opening dusky to blackish. Fins brownish, base of pectoral

295

Chaetodon garnoti Lesson, Voy. Coguille,
^{2 (1/4) 1830}
Zool. (1830), p. 174 (name in synonymy).

Chaetodon mulsanti Thiollière Fund.

Woodlark, 1857, p. 163. Woodlark Island.

Chaetodon papua (Montouzier) Thiollière,
l.c. (name in synonymy).

and all of ventral fins dusky
to blackish.
East Indies.

U.S. N. M., no. 78230. Lat. $4^{\circ}12'$
 $44''$ N., long. $118^{\circ}27'44''$ E., Sibubo
Bay, Borneo. In 305 fathoms.
Albatross Collection (D.).
Length 270 mm. Type.

296

Depth $1\frac{2}{3}$ to $1\frac{3}{4}$; head 3 to $3\frac{1}{2}$, width 2 to $2\frac{1}{3}$. Snout $2\frac{1}{2}$ to 3 in head from snout tip; eye 4 to $4\frac{2}{5}$, $1\frac{2}{3}$ to $1\frac{4}{5}$ in snout, $1\frac{1}{4}$ to $1\frac{2}{5}$ in interorbital; maxillary $\frac{1}{2}$ to $\frac{3}{5}$ in snout, $3\frac{1}{2}$ to $3\frac{3}{4}$ in head; interorbital $3\frac{1}{4}$ to $3\frac{2}{3}$, convex. Gill rakers 5 + 10, short points, robust, $\frac{1}{6}$ of gill filaments, which $1\frac{1}{5}$ in eye.

Scales 34 to 37 between gill-opening and caudal base. Tubercles 32 to 34 in lateral line; 7 to 11 scales above lateral line, 16 or 17 below. Scales with 8 to 10 basal radiating striae, with 1 to 7 incomplete auxiliaries; 101 to 143 apical denticles, with 15 to 27 transverse series of basal elements; circuli fine.

D. XII or XIII, 22, I or 23, I, last spine $1\frac{2}{3}$ to 2 in total head length, fourth ray $1\frac{2}{3}$ to 2 in combined head and body; A. III, 21, I or 22, I, last spine $1\frac{4}{5}$ to $2\frac{1}{2}$ in head length, fourth ray $1\frac{3}{5}$ to 2; least depth of caudal peduncle $2\frac{2}{3}$ to 3; caudal $1\frac{1}{2}$ to $1\frac{3}{4}$, hind slightly double concave; pectoral $1\frac{1}{5}$ to $1\frac{1}{2}$; ventral $1\frac{1}{3}$ to $1\frac{2}{5}$.

Largely light brown, each row of scales on lower side of abdomen with ~~slightly~~ dark longitudinal streak formed along junctures of scales. Preorbital, postocular and opercle grayish. Diffuse pale brown.

1737

Ventrifossa garmani (Jordan and Gilbert)

Coryphaenoides garmani Jordan and Gilbert,
Bull. U. S. Fish Comm., vol. 22, p. 610, fig.,
1902 (Aug. 1904) (type locality: Sagami
Sea). — Franz, Abhandl. Kon. Bayer.
Akad. Wiss., vol. 4, Suppl. Band 1,
p. 26, 1910 (Sagami Bay). — Jordan,

Tanaka, Snyder, Journ. College Sci.
Tokyo, vol. 33, p. 416 (fig. 386 copied),
1913 (compiled). — Jordan and Thompson,
Mem. Carnegie Mus., vol. 6, no. 4, p. 306,
Sep. 1914 (Bosho; Misaki).

Lionurus garmani Gilbert and Hubbs, Proc.
U. S. Nat. Mus., vol. 51, p. 145, 193, 1916
(Eastern Sea; Kii Channel; off Matsushima;
Suruga Gulf; Sagami Bay; 108 to 369
fathoms).

Ventrifossa garmani Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
544, 1920 (diagnosis in key).

Depth $6\frac{1}{5}$ to $7\frac{1}{2}$; head 5 to $5\frac{1}{2}$, width $1\frac{4}{5}$ to 2. Snout to eye $2\frac{3}{5}$ to $3\frac{2}{3}$ in head; eye $2\frac{3}{4}$ to $4\frac{1}{4}$, greater than snout to $1\frac{1}{4}$ in snout, $1\frac{1}{5}$ in interorbital; orbit $3\frac{4}{5}$ in head, 1 in snout, slightly greater to 1 in interorbital; maxillary reaches eye center, length from front end $2\frac{1}{8}$ to $2\frac{1}{4}$ in head; mandibular barbel 1 to $1\frac{1}{3}$ in orbit; teeth in villiform bands in jaws, of 4 to 6 irregular series; interorbital $3\frac{1}{4}$ to $3\frac{4}{5}$ in head, low, nearly level forward. Gill rakers $2 + 15$, low spinescent tubercles, $\frac{1}{2}$ of gill filaments, which $3\frac{1}{2}$ in eye.

Scales 123 in lateral line to end of broken tail; 8 above, 18? below, 23 predorsal forward opposite

294

(Nusa Laut). — Ahl, Arch. Naturges.,
band 89, abth. A, heft 5, 1923, p. 65.

(Ralum, New-Pommerania, New Guinea,
Bougainville Island, Jaluit, Samoa, Ceram,
Tringtau). — Fowler, Bishop Mus. Bull.,
no. 42, 1925, p. 12 (Guam), p. 34 (Samoa).
— Fowler and Ball, Bishop Mus. Bull.,
no. 26, 1925 (1926), p. 17 (Johnston and
Wake Islands).

Rabdophorus ephippium Swainson, Nat. Hist.
Animals, vol. 2, 1839, p. 211.

Tetragnopterus (Rabdophorus) ephippium
Bleeker, Atlas Ichth. Ind. Néerl., vol. 9,
1877, p. 36, plate (16) 378, fig. 2 (Pocor, Java,
Celebes, Flores, Timor, Ternate, Ambonia,
Ceram, Harau, Goram, New Guinea).

Chaetodon principalis Cuvier, Hist. Nat.
Poiss., vol. 7, 1831, p. ⁸¹65. East Indies (on
Renard and Valentyn). — Kaup, Arch.
Naturges., abth. 1, 1860, p. 156.

hind edge of orbit. Scales with 5 radiating rows of short wide set spines apically, none extending beyond hind edge of scale, circuli moderate, complete.

D. II, 10 - 115?, second simple ray pungent, with row of fine inconspicuous antrorse serrae along front edge, length $1\frac{1}{4}$ to $1\frac{2}{5}$ in head; interdorsal space $1\frac{3}{5}$ to 2; A. 122, fin height 4; pectoral rays I, 19, fin $1\frac{4}{5}$ to $2\frac{1}{5}$ in head; ventral rays I, 7, fin $2\frac{1}{2}$ to $2\frac{7}{8}$ in head.

Brown, with silvery white tints, especially on sides of head and body. Under surface of head and gill opening dusky to neutral black, also belly and chest. Iris silvery white. Inside

Chaetodon ethiopianus Cuvier.

Chaetodon ethiopianus Cuvier, Atlas. Nat. Poiss.

vol. 7, 1831, p. 64, plate 174. Indica. —

Kerr, Voy. Coquille, Atlas. Nat. Poiss., 1830 (1831).

p. 174, plate 29, fig. 1 (Beaulieu Bay, Bonaparte).

— Büchner, Exp. Fish. Brit. Mus., vol. 2, 1860.

p. 7 (Amboina; Fish.) — Kant, Arch. Naturg.

vol. 1, 1860, p. 15 (Indica; Takia). —

Büchner, Journ. Mus. Göttingen, band 2-3,

vol. 5-6, 1874, p. 86, plate 27, fig. A-B (Yong,

Society Islands) — De Kay, Proc. Am. Mus. Nat. Hist.

New York Water, vol. 7, 1884, p. 453 (Candwell,

Greenland) — Meyer, Ann. Ver. Zool. Hist.

Nat. Hist., vol. 14, 1885, p. 16 (North Polar;

Yemate; Myrene) — Clara, Act. Faun. Fish.

vol. 1, 1895, p. 485 (Yong, Guinea, Storer).

— Jordan and Richardson, Bull. Bur. Fisher.

vol. 27, 1907 (1908), p. 269 (Cayman Islands).

Wether, Vikoya Exped., band 65, 1913, p. 307

mouth white. Gill opening
blackish inside. Fins all
more or less pale brown.

Japan. A fragile species,
the preserved specimens rarely
with much squamation and the
fins usually damaged. The
sides usually burnished with
silvery to silvery gray.

U. S. N. M., no. 50933.

May 4, 1900.

Albatross Collection (D. 3695).

Length 268 mm.

U. S. N. M., no. 51415.

Albatross Collection (D. 3738).

Length ~~127~~ to 250 mm. 9 examples.

Paratypes ⁸⁵.

292

Chaetodon melapterus Guichenot.

Chaetodon melapterus Guichenot, Fauna.

Reunion, Haillard, 1866, p. 6, Reunion Island.

Chaetodon melanopterus Playfair, Fishes of Zanzibar, 1865, p. 34 (Aiden). — Boulenger, Proc. Zool. Soc. London, 1887, p. 657 (Muscot, Arabia). — Ahl, Arch. Naturges., Band 89, abth. A, Heft 5, 1923, p. 65 (copied).

Snout conic, little longer than eye. Preopercle hardly serrated. Scales large. D. XIII, 21; A. III, 28; soft dorsal and anal rounded posteriorly. Brilliant yellow, with darker longitudinal stripes following series of scales, but without dark punctuation. Snout end black. Ventrals black, also another parallel from first dorsal spines to preopercle angle, narrower than orbit and extends around throat. Vertical fins black, except yellowish edges of dorsal and anal and hind white part of caudal. (Playfair)

U. S. N. M., no. 76876.

1741

Albatross Collection (D. 4966). Length
105 mm.

U. S. N. M., no. 76877.

Albatross Collection (D. 4967). Length
86 to 98 mm. 2 examples.

U. S. N. M., no. 76878.

In 129 fathoms. October 10, 1906.

Albatross Collection (D. 5048). Length
88 mm.

U. S. N. M., no. 76879.

Albatross Collection (D. 5069). Length 113
mm.

57002 U.S.N.M. Apia, Samoa.
Bureau of Fisheries 1902. Length 83 to 115 mm. 3 examples.

65437 U.S.N.M. Mangareva.
Albatross Collection 1904-1905. Length 60 mm.

65796 U.S.N.M. Suva, Fiji. Bureau of Fisheries. Length 94 mm. [08864].

65952 U.S.N.M. Fakaofa, Albatross Collection.

71682 U.S.N.M. Naha, Okinawa.
Albatross Collection 1906. Length 125 mm.
3 examples (with 79260 U.S.N.M.).

Philippines. Length 111 to 122 mm. 3 examples.
E. H. Taylor.

As Chaetodon setifer.

83269 U.S.N.M. No locality. Wilkes Exploring Expedition. Length 87 mm.

U. S. N. M., no. 76880.

1742

Albatross Collection (D. 5088). Length
110 mm.

U. S. N. M., no. 77204.

Albatross Collection (D. 5059). Length
255 to 280 mm. 3 examples.

U. S. N. M., no. 77205.

Albatross Collection (D. 4967). Length
212 to 238 mm. 3 examples.

U. S. N. M., no. 77206.

Albatross Collection (D. 4968). Length
270 mm, largest of 6 examples all in
poor preservation.

290

22959 to 22965. Reefs in Apra Bay, Guam. November 19-20, 1907. Length 38 to 115 mm.

21170 U.S.N.M. Hawaiian Islands. Paris Museum. Length 127 mm.

28553 U.S.N.M. Fiji. Paris Museum. 3 young.

28559 U.S.N.M. Madagascar. Paris Museum. Length 73 to 95 mm. 2 examples.

30653 and 30654 U.S.N.M. New Guinea. Australian Museum. Length 107 to 112 mm. 2 examples.

32748 U.S.N.M. Indian Archipelago. Leiden Museum. Length 100 mm.

43936 U.S.N.M. Suva, Albatross Collection. 1 young.

43936 U.S.N.M. Mauritius. Colonel

Nicholas Pike. Length 90 to 114 mm. 6 examples.

55427 U.S.N.M. Suva, Fiji. Bureau of Fisheries. Length 81 to 119 mm. 12 examples.

55478 U.S.N.M. Honolulu. Fur Seal Commission. Length 119 mm.

U. S. N. M., No. 77207.

1743

Albatross Collection (D. 5060). Length
250 mm.

U. S. N. M., No. 77208.

Albatross Collection (D. 5066). Length
233 mm.

U. S. N. M., No. 77209.

Albatross Collection (D. 5054). Length
258 mm.

U. S. N. M., No. 77210.

Albatross Collection (D. 5065). Length
222 mm.

prolongation from peduncular blotch
sometimes indicates black basal bar
of dorsal and its yellow center distinct.
Anal bars differentiated but more or
less ^{margin black} hazy. Caudal dusky hazaline, with
narrow black basal bar.

1161 to 1163. Tataan, Sinaloa Island.
February 19, 1908. Length 67 to 92 mm.

882 and 883. Tataan. February 20, 1908.
Length 73 to 77 mm.

238. Ulugan Bay, Palawan. December 29, 1908.
Length 77 mm.

10434 and 10435. Varadero Bay, Mindoro.
July 23, 1908. Length 81 to 92 mm.

21475. Dowarra Island, Dutch East Indies.
December 2, 1909. Length 104 mm.

664 on Hokenho, Soo Wan, Formosa.
January 29, 1910. Length 132 mm.

4815. Hokenho. January 9, 1910. Length 135 mm.

U. S. N. M., No. 77211.

1744

In 250 fathoms. October 13, 1906.
Albatross Collection (D. 5062). Length
193 to 207 mm. 2 examples.

U. S. N. M., No. 77212.

In 361 fathoms. August 13, 1906.
Albatross Collection (D. 4917). Length
250 ~~mm~~ mm.

U. S. N. M., No. 77213.

Albatross Collection (D. 5072). Length
200 mm.

574 and 575. Surigao, Mindanao.
May 8, 1908. Length 103 to 116 mm.

210, 211, 669. Taganak Island. January
7, 1909. Length 114 to 115 mm.

432, 455, 4817, 9674, 9675. Talissi Island.
November 9, 1909. Length 42 to 65 mm.

380 and 3881. Tara Island. December
14, 1908. Length 105 to 118 mm.

589, 590, 1150 [782], 1151 [783]. Tara Island.
December 15, 1908. Length 30 to 102 mm.

Head and front ocular bar entirely
yellow and little dusky on top of snout.
variably distinct and forehead sometimes
dusky. Dorsal nearly uniform yellow,
except dusky margin of soft fin, sometimes
tip of soft dorsal very slightly orange.
Black blotch across front of caudal
peduncle not quite reaching lower edge;
on upper part of caudal peduncle bright
yellow spot medianly with bluish;

1745

Ventrifossa macronema (Smith and Radcliffe)

Macrourus macronemus Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 43, p. 115, pl.
24, fig. 3, 1912 (type locality: lat. $9^{\circ}37'5''$ N., long. $121^{\circ}12'37''$ E., near Cagayan,
Jolo Sea, 340 fathoms).

Lionurus macronemus Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916
(reference).

Ventrifossa macronemus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
545, 1920 (south west Luzon, Jolo Sea,
between Siquijor - Bohol; 340 to 439
fathoms).

Depth 7; head $6\frac{1}{4}$, width $2\frac{1}{5}$. Snout
 $3\frac{1}{2}$ in head; eye $3\frac{4}{5}$, 1 in snout,
slightly greater than interorbital;
maxillary reaches $\frac{4}{5}$ in orbit, length
from front end $2\frac{1}{8}$ in head;
mandibular barbel $\frac{4}{5}$? of orbit;
teeth in 6 irregular rows with outer

upper enlarged row, close set, slender, lower more uniform or none enlarged; interorbital 4 in head, low, apparently more or less level. Gill rakers 1 + 8 low spinescent tubercles, $\frac{1}{3}$ of gill filaments, which $2\frac{2}{5}$ in eye.

Scales 210 in lateral line; 13 above, 27 below, 27 predorsal forward opposite hind eye edge. Scales with 17 to 23 close set rows of rather long slender apical spinules, last extended well beyond hind scale edge; circuli moderate, not extended apically.

D. II, 8 - 200?, second simple ray slender, front edge with row of antrorse spinules, $1\frac{1}{8}$? in head; interdorsal space about

287
4846. Rapurapu Island. June 22, 1909.
Length 67 mm.

1032 and 1033. Romblon. March 26, 1908.
Length 48 to 61 mm.

487, 697, 3884. Sablayan, Mindoro.
December 12, 1908. Length 72 to 108 mm.

945 to 947. Sabtan Island. November 9,
1908. Length 103 to 115 mm.

1289. Sacol Island. September 9, 1909.
Length 65 mm.

15708. Sanguisapo Island. February 24,
1908. Length 96 mm.

763, 994, 995. San Miguel Harbor, Ticao
Island. April 21, 1908. Length 100 to 105 mm.

1178. Santa Cruz Island. April 24, 1908.
Length 100 mm.

21887. Singaan Island. September 21, 1909.
Length 46 mm.

1071 to 1073. South Luzon, Tominiao Island.
February 26, 1908. Length 103 to 105 mm.

equals orbit; A. 160?, fin height 3? in head; pectoral rays I, 20, fin $1\frac{3}{4}$ in head; ventral rays I, 10, fin $1\frac{1}{4}$.

Uniform dark brown. Inside mouth and gill opening blackish brown. Iris blackish brown. Fins all more or less blackish brown.

Philippines.

U. S. N. M., No. 72931. Cagayan Island (S.), S. 11° W., 3.4 miles (lat. 9°37'05"N., long. 121°12'37"E.), Jolo Sea. In 340 fathoms. Rich 31, 1909.

Albatross Collection (D. 5424). Length 317 mm. Type of macronus macronemus.

286

1308, 1309, 1310, 1314. Polloc. May 23,
1908. Length 77 to 103 mm.

603. Port Calton~~m~~. December 15, 1908.
Length 109 mm.

1234. Port Dupon. March 17, 1909.
Length 102 mm.

708 to 710. Port Galera. June 9, 1908.
Length 105 to 115 mm.

4781, 4782, 8759, 10359. Port Jamelo,
Luzon. July 13, 1908. Length 68 to 119 mm.

10334, 10335, 10348, 10479. Port Maricaban.
July 21, 1908. Length 74 to 93 mm.

924 and 1022. Port Natalvi. November
22, 1908. Length 108 to 113 mm.

988. Port Natalvi. November 23, 1908.
Length 105 mm.

22971. Port Palapag. June 3, 1909.
Length 34 mm.

662. Port Usan. December 17, 1908.
Length 116 mm.

1748

Ventrifossa lucifer (Smith and Radcliffe)

Macrourus lucifer Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 43, p. 113, pl.
24, fig. 1, 1912 (type locality: near
Point Tagolo, Mindanao, 175 fathoms).

Lionurus lucifer Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 145, 1916
(reference).

Ventrifossa lucifer Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
(545) 553, 1920 (south west Luzon;
north Mindanao; 170 to 182 fathoms).

1749

Ventrifossa misakia (Jordan and Gilbert)

Coryphaenoides misakius Jordan and Gilbert,
Bull. U. S. Fish Comm., vol. 22, p. 611, fig.,
1902 (Aug. 1904) (type locality: Sagami
Bay near Misaki). — Jordan, Tanaka,

Snyder, Journ. College Sci. Tokyo, vol. 33,
p. 415 (fig. 385 copied), 1913 (compiled).
— Jordan and Thompson, Mem. Carnegie
Mus., vol. 6, no. 4, p. 306, 1914 (Misaki).

Lionurus misakius Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. (145) 194,
1916 (no locality).

Ventrifossa misakius Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
(544) 545, 1920 (off southeast Luzon,
383 fathoms).

Macrourus asper (not Günther) Jordan
and Thompson, Mem. Carnegie Mus.,
vol. 6, no. 4, p. 306, pl. 38, fig. 2, 1914
(Misaki).

Depth $5\frac{2}{3}$ to $6\frac{3}{4}$; head $4\frac{1}{3}$ to $4\frac{2}{5}$, width $1\frac{4}{5}$ to $2\frac{1}{5}$. Snout to eye $3\frac{3}{5}$ to $3\frac{7}{8}$ in head; eye $3\frac{7}{8}$ to 5, $1\frac{1}{5}$ to $1\frac{2}{5}$ in snout, $1\frac{1}{5}$ to $1\frac{1}{4}$ in interorbital; orbit $3\frac{1}{4}$ to $3\frac{3}{4}$ in head, $1\frac{1}{5}$ to $1\frac{1}{4}$ times snout, 1 to $1\frac{1}{5}$ times interorbital; preoral length $1\frac{1}{3}$ to $1\frac{3}{5}$ in orbit, oblique; maxillary $\frac{2}{3}$ to $\frac{3}{4}$ in orbit, length from front end $2\frac{2}{5}$ to 3 in head; mandibular barbel $4\frac{1}{5}$ to 5 in orbit; teeth fine, small, in 3 or 4 irregular rows in jaws with outer row slightly enlarged; interorbital $3\frac{4}{5}$ to 4 in head, low. Gill rakers 2 + 12, low spinescent tubercles on second arch, $\frac{1}{2}$ of gill filaments, which $3\frac{3}{4}$ in orbit.

285
991. Nasugbu, Luzon. January 16, 1908.
Length 95 mm.

390. Near Palay Bay, Luzon. June 16,
1909. Length 110 mm.

10404. North west of Verde Island.
July 22, 1908. Length 87 mm.

22796. Opol, Mindanao Island.
August 4, 1909. Length 71 mm.

364, 365, 702, 895, 896. Pagapas Bay.
February 20, 1909. Length 50 to 106 mm.

273. Paluan Bay, Mindoro. December 11,
1908. Length 119 mm.

925 and 926. Panabutan Bay. February 6,
1908. Length 117 mm.

1119 and 1120. Pangasinan Island. February
13, 1908. Length 43 to 70 mm.

798. Parang, Mindanao. May 23, 1908.
Length 112 mm.

1 young. Philippines. Length 39 mm.

Scales 227 in lateral line, small, adherent; 12 or 13 above, 30 below, 58 predorsal to snout end of which 24 forward opposite hind edge of orbit. Scales with 10 or 11 irregular somewhat horizontal apical rows of long slender spinules, last extended well beyond hind edge of scale; circuli moderate, complete.

D. II, 10 or II, 11-143, second simple ray slender, with row of fine close set antrorse spinules along front edge, length 2 to $2\frac{2}{3}$ in head; interdorsal space $2\frac{1}{4}$ to $2\frac{2}{5}$; A. 157, fin height $4\frac{1}{5}$ to $5\frac{1}{5}$; pectoral rays I, 18, fin $1\frac{7}{8}$ to 2 in head; ventral rays I, 7, fin $2\frac{3}{4}$ to $3\frac{1}{8}$ in head.

224
524 and 7969. Little Santa Cruz Island.
May 26, 1908. Length 110 mm.

1111, 1112, 4879 to 4881. Little Santa Cruz
Island. May 28, 1908. Length 76 to 106 mm.

643. Lode Bay, Destacado Island.
March 13, 1909. Length 107 mm.

1130. Mactan Cove. April 6, 1908. Length
103 mm.

3591. Mactan Island, Cebu. March 25,
1909. Length 110 mm.

435 to 438. Maculabo Island. June 14,
1909. Length 85 to 104 mm.

1298. Makesi Island. April 5, 1909.
Length 76 mm.

1141. Mansalay Bay. June 4, 1908.
Length 90 mm.

906 to 908. Maricaban Island. January 20, 1908.
Length 95 to 110 mm.

1079 to 1081. Masbate reef, Masbate Island.
April 20, 1908. Length 102 to 110 mm.

Uniformly brownish, lower surfaces of head and trunk darker. Iris dark gray. Inside mouth pale. Inside gill opening blackish brown, paler deep inside. Fins brown.

Philippines, Japan. Jordan and Gilbert have noted this species in their original description as "strongly resembling Malacocephalus laevis and hawaiiensis" though their figure of C. misakius fails in showing the front edge of the second simple dorsal ray entire, though their description says "second dorsal spine finely serrulated throughout, except for a very short distance at base and tip."

283
349. Endeavor Strait. December 22,
1908. Length 78 mm.

155 to 158. Endeavor Strait. December
23, 1908. Length 105 to 116 mm.

1219, 1220, 4873. Galera Bay, Mindoro.
June 9, 1908. Length 101 to 108 mm.

4610 and 4611. Grande Island reef,
Subig Bay. January 8, 1908. Length 117
to 118 mm.

519. Gubat, Luzon. June 23, 1909.
Length 78 mm.

1202. Hinunangan, Cebu Island.
July 30, 1909. Length 115 mm.

800. Langa Point, Luzon. June 24, 1909.
Length 90 mm.

1087 to 1090. Limbonex Cove, Luzon. January
4, 1908. Length 117 to 127 mm.

337 to 339. Limbonex Cove. February 8, 1909.
Length 71 to 115 mm.

U. S. N. W., No. 51421.

1753

Length 207? to 390 mm. 4 examples.
Paratypes.

292
1029 and 1226. Capanyugan Port.
May 10, 1908. Length 95 to 110 mm.

11856. Caracaran, Batan Island.
June 8, 1909. Length 89 mm.

507. Casagoran, Malhon Island.
July 27, 1909. Length 66 mm.

658. Caumahala Bay. March 11, 1909.
Length 110 mm.

254. Caxisigan, ^{near Balabac Island.} December 29, 1909. Length
108 mm. [1010.] Blackish stripes on side
more slaty and rest of dorsal and
anal overshadowed with dusky. Body
stripes 7 or 8 carried into scaly portion
of spinous dorsal. Yellow bar crosses
front of cheek and ends about even
with middle of eye; yellowish margin
of ocular ~~above~~ eye a separate coloration.
Yellow bar at anal base sulphur.

770. Cebu market. March 19, 1909.
Length 112 mm.

1754

Ventrifossa nigrodorsalis Gilbert and Hubbs

Ventrifossa nigrodorsalis Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p.
(544) 546, fig. 36, 1920 (type locality:
northern coast of Mindanao; vicinity
Formosa; south Luzon; east Mindoro;
Jolo; west Bohol; between Marinduque-
Luzon; north west Panay; Palawan
Passage; Balayan Bay; Marinduque;
between Burias-Luzon; Dupon Bay;
between Cebu-Leyte; east Luzon;
north Mindanao; between Cebu-
Siquijor; between Negros-Siquijor;
Sibuko Bay, Borneo; between Gillolo-
Makyan; between Gillolo-Kayoa;
159 to 415 fathoms). — Weber and

Beaufort, Fishes Indo Austral. Archip.,
vol. 5, p. 68, 1929 (compiled).

1755

Ventrifossa nigromarginata (Smith and Radcliffe)

Macrourus nigromarginatus Smith and Radcliffe, Proc. U. S. Nat. Mus., vol. 43, p. 114, pl. 24, fig. 2, 1912 (type locality: near Simulac Island, 303 fathoms).

Ventrifossa nigromarginatus Gilbert and Hubbs, Bull. U. S. Nat. Mus., no. 100, vol. 15, p. (544) 552, 1920 (Jolo; west Bohol; south east Mindoro; south west Luzon; between Burias - Luzon; between Cebu - Bohol; north Mindanao; between Siquijor - Bohol; between Jolo - Tawi Tawi; north Tawi Tawi; Darvel Bay, Borneo; Flores Sea; 145 to 392 fathoms).

Ventrifossa nigromarginata Weber and Beaufort, Fishes Indo Austral. Archip., vol. 5, p. 66, 1929 (compiled).

Lionurus nigromaculatus Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, 1916, p. 145, 192 (name only; error).

1756

Ventrifossa occidentalis (Goode and Bean)

Malacocephalus occidentalis Goode and Bean, Proc. U. S. Nat. Mus., vol. 8, p. 597, 1885 (type locality: lat. $35^{\circ}44'N.$, long. $74^{\circ}51'W.$, off Cape Hatteras, 132 fathoms; off Grenada, 164 fathoms). — Günther,

Rep. Voy. Challenger, vol. 22, p. 134, 1887 (reference). — Goode and Bean, Oceanic Ichth., p. 415, 1895 (copied). — Jordan

and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 3, p. 2570, 1898 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 395, 1899 (reference).

Chalinura occidentalis Goode and Bean, Oceanic Ichth., p. 413, 1895 (off Grenada; lat. 35° to $44^{\circ}N.$, long. 57° to $74^{\circ}W.$; 132 or 133 fathoms).

Macrurus (Chalinura) occidentalis Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 390, 1906 (reference).

1757

Lionurus occidentalis Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 145,
1916 (reference).

Ventrifossa occidentalis Gilbert and
Hubbs, Bull. U. S. Nat. Mus., No. 100, vol. 1,
p. 544, 1920 (diagnosis in key).

Depth $6\frac{1}{2}$ to 7 (to end of broken tail);
head $6\frac{1}{4}$ to $6\frac{1}{2}$, width $1\frac{1}{2}$ to 2. Snout
 $3\frac{2}{3}$ to $4\frac{1}{5}$ in head; eye $2\frac{4}{5}$ to $2\frac{7}{8}$,
greatly exceeds snout or interorbital;
maxillary reaches opposite hind eye
edge, length from front end $1\frac{4}{5}$ to $1\frac{7}{8}$
in head; preoral vertically oblique
in profile, length $4\frac{2}{3}$ to $6\frac{1}{5}$ in
head; mandibular barbel $2\frac{1}{5}$ to $2\frac{3}{5}$;
teeth in villiform bands in jaws,
with outer row of larger, well
spaced, curved, pointed teeth, in lower
jaw smaller; interorbital $3\frac{1}{2}$ to $4\frac{1}{4}$
in head, low, nearly level. Gill rakers
 $2+8$ short low knobs on second arch,
nearly $\frac{2}{5}$ -gill filaments, which $\frac{1}{3}$
of eye.

Scales all fallen, only indistinct pockets remaining, evidently of quite small size. Only few small scales remaining on breast, which finely rugose.

D. II, 9? or II, 10?, soft fin not made out, second simple ray with at least series of 4 low antrorse points well spaced terminally; interdorsal space 2 to $2\frac{1}{4}$ in head; A. 154? to end of broken tail, fin rather low, height nearly equals eye; pectoral rays I, 20, fin $2\frac{3}{5}$? in head; ventral rays I, 8, broken off short.

Brown, sides of head, body and tail burnished with silvery white. Iris pale or whitish. Inside mouth pale and gill openings dark brown. Fins all pale

281
1319 and 1320. Alibijaban Island.
March 6, 1909. Length 110 to 115 mm.

1270, 1271, 1282, 1283, ^{1284,} 11284, 11285, 15692.
Alimango Bay, Burias Island. March 5,
1909. Length 75 to 116 mm.

624. Bagacay Bay, Escarpada Island.
March 13, 1909. Length 117 mm.

919. Balikias Island, Lubang. July 17,
1908. Length 95 mm.

1053, 4713, 4714, 9670. Bolalo Bay, Palawan.
December 21, 1908. Length 77 to 114 mm.

754. Buang Bay, Talipit Island.
March 15, 1909. Length 120 mm.

4856. Bubuian Island, Jolo. February 14,
1908. Length 30 mm.

817, 864. Busin Harbor, Burias Island.
April 23, 1908. Length 65 to 94 mm.

1240 to 1242, 1244. Candaraman Island.
January 4, 1909. Length 71 to 98 mm.

brownish or tinged with brassy,¹⁷⁵⁹
not dark.

Gulf Stream, West Indies.

U. S. N. M., No. 37336. Lat. $35^{\circ} 44' N$,
long. $74^{\circ} 51' W$. In 32 fathoms.

Albatross Collection (D. 2310). Length
154 to 187? mm. In poor preservation.
2 examples. Type and paratype.

U. S. N. M., No. 44645.

Albatross Collection.

Length 123 mm. Depth $7\frac{3}{4}$; head $7\frac{1}{4}$,
width $2\frac{1}{4}$. Snout 4 in head; eye

280
other submarginal in fin.

Red Sea, Zanzibar, Madagascar,
Mauritius, ^{Seychelles} India, East Indies.
Melanesia, Micronesia, Polynesia,
Hawaii. A very abundant species
in tropical coral reefs and with
constant color pattern, the changes
with age slight.

$2\frac{1}{2}$; maxillary reaches $\frac{2}{3}$ in eye,
length from front end 2 in head;
mandibular barbel $2\frac{1}{4}$; interorbital
 $3\frac{4}{5}$. Gill rakers 2 + 8 short
spinescent tubercles on second
arch.

279

white band each side separating
black of muzzle and parallel black
narrow band from first dorsal
spine to hind eye edge ^{this}, then down
across side of head along preopercle
edge to gill opening; above eye narrow
black line with narrow white front
bordering line. Long cuneate black
band along soft dorsal base, widening
behind and reflected on upper surface
of caudal peduncle; band bordered
above and below with yellow line.
Soft dorsal with upper portions largely
pale, with medium longitudinal dark
line and another submarginal. Anal
largely brown, edge narrowly whitish
and longitudinal black subbasal
band, expanded little at last rays,
bordered all around with yellow
line. Caudal with black transverse
band, hind edge broadly grayish,
then submarginal yellow narrow band
next to black band; basally fin
brown, then buff band next to med-
ium black band. Paired fins uni-
form pale brown. Young examples
black black line touching hind eye edge,
have muzzle pale, dark basal band
of soft dorsal crossing caudal peduncle
broadly though leaving white spot
posteriorly above, anal with pale
longitudinal subbasal line and 2
dark parallel bands, one median and

Ventrifossa petersonii (Alcock) 1761

Macrurus petersonii Alcock, Ann. Mag. Nat. Hist., ser. 6, vol. 8, p. 121, 1891
(type locality: lat. $11^{\circ}31'40''N$, long. $92^{\circ}46'40''E$, Andaman Sea, 188 to 220 fathoms); Journ. Asiatic Soc. Bengal, vol. 58, pt. 1, p. 127, 1894 (); Illustrat. Zool. Investigator, pt. 1, pl. 3, fig. 5, 1892. — Goode and Bean, Oceanic Ichth., p. 390, 1895 (reference).

Macrurus petersoni Garman, Mem. Mus. Comp. Zool., vol. 24, p. 396, 1899 (reference). — Weber, Fishes Indo Austral. Archip., vol. 57, p. 156, 1913 (Madura Sea; Flores Sea; Arafura Sea; Banda Sea; Macassar Straits; 289 to 4391 meters).

Macrurus (Macrurus) petersoni Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 260 (388), 1906 (west coast Sumatra; Nicobars; east coast Africa; 296 to 1019 meters).

¹⁷⁶²
Ventrifossa petersonii Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p.
544, 1920 (diagnosis in key).

Ventrifossa petersoni Weber and Beaufort,
Fishes Indo Austral. Archip., vol. 5,
p. 67, 1929 (Weber's material).

Macurus hispidus Decock, Ann. Mag.
Nat. Hist., ser. 6, vol. 4, p. 397, 1889
(type locality: Bengal Bay between
north and South Sentinal Islands,
220 to 240 fathoms); Illustrat. Zool.
Investigator, pt. 2, pl. 13, fig. 2, 1894.

Chalinura hispidus Goode and Bean,
Oceanic Ichth., p. 412, 1895 (reference).
— Garman, Mem. Mus. Comp. Zool.,
vol. 24, p. 395, 1899 (reference).

Genus Lionurus Günther

1763

Lionurus Günther, Rep. Voy. Challenger, vol. 22, pp. 124, 141, 1887. (Type Coryphaenoides (Lionurus) filicauda Günther, designated by Jordan, Genera of Fishes, pt. 4, p. 437, 1900.)

Hezumia Jordan, in Jordan and Starks, Bull. U. S. Fish Comm., vol. 22, p. 620, 1902 (Aug. 1904). (Type hezumia condylura Jordan and Gilbert, monotypic.)

Body usually slender, tail not rapidly tapering. Head not very massive. Snout moderately extended, not greatly widened or high. Bones of head firm, sensory canals moderately developed and skull without high crests. Gill rakers less than 15 on lower limb of second arch. Branchiostegals 7. Scales small, well imbricated, spinules usually directed backward.

1164

Dorsal spine (second simple ray)
trenchant on front edge, usually
serrate. Vent distinct from
anal fin, preceded by naked
area.

A large genus of tropical
or subtropical seas. Size
usually small, less than 400 mm
in length.

1765

Lionurus brevibarbatus Barnard

Lionurus brevibarbatus Barnard,
Ann. Mag. Nat. Hist., ser. 9, vol. 15,
p. 503, 1925 (type locality: off
Cape Point, 300 to 950 fathoms);
Ann. South Afr. Mus., vol. 21, pt. 1,
p. 349, June 1925 (types).

1766

Lionurus cetonuropsis Gilbert and
Hubbs

Lionurus cetonuropsis Gilbert and
Hubbs, Proc. U. S. Nat. Mus., vol. 51,
p. 1202, pl. 11, fig. 1, 1917 (type
⁽¹⁴⁶⁾locality: off east coast of Hondo,
918 fathoms).

Depth $7\frac{1}{2}$? (tail broken in two);
head 6?, width $2\frac{1}{5}$. Snout 3 in
head; eye 5, $1\frac{3}{4}$ in snout, $1\frac{3}{4}$ in
interorbital; maxillary reaches $\frac{1}{2}$
in eye, length from front end $4\frac{1}{5}$
in head; preoral length in profile
4; barbel slender, 3 in eye; teeth
in villiform bands in jaws, of
4 or 5 irregular series and outer
premaxillary row slightly larger;
interorbital $3\frac{1}{4}$ in head, low,
depressed or concave medially. Gill
rakers ~~of second arch~~ 0 + 9. Two
robust spinescent knobs on
second arch, $\frac{1}{3}$ of gill filaments,
which $\frac{1}{3}$ of eye.

Scales 180? in lateral line, of which 9 forward of vent; 11 above; 20 below, 43? predorsal. Scales largely fallen, more or less uniformly small and finely spinescent, less defined but more spinescent on muzzle. Scales without striae; apically group of 12 or more partly erect slender spinules; circuli moderate.

D. II, 9 - 152?, first simple ray with few wide-set low spinules along front edge and end filamentous, at least 1 2/5 in head; interdorsal space 3; A. 127?, fin much higher than second dorsal; no distinct ^{pseudo}subcaudal and end of tail broken off; pectoral rays I, 17,

717 [1683]. Near Palay Bay. June 16, 1909. Length 135 mm.

701. Pagapas Bay. February 20, 1909. Length 95 mm.

730. Port Salera. June 9, 1908. Length 105 mm.

406. Port Palapay. June 3, 1909. Length 75 mm.

18978. Dinalasay Island, Masamal. June 12, 1909. Length 112 mm.

12586. Rapurapu Island. June 22, 1909. Length 110 mm.

4769, 4770. Sablayan, Mindoro. December 12, 1908. Length 127 to 143 mm.

9678 [119]. Siapi Island market. February 17, 1908. Length 92 mm.

1177. Santa Cruz Island. April 24, 1908. Length 123 mm.

595, 596. Silino Island. August 10, 1909. Length 127 to 138 mm.

196. Simabue Island. September 22, 1909. Length 136 mm.

Fin $1\frac{7}{8}$ in head; ventral rays I, 5,
fin $3\frac{1}{2}$.

Brown, little paler on head, especially anteriorly. Opercular region, breast and belly dark neutral gray or chocolate. Iris grayish. Inside mouth and gill opening blackish. Fins brownish, ventrals darker.

Japan. According to its describers closely related to Lionurus parvipes. Only known from the type, described above, and a small specimen said to measure but 20 mm to vent and be in poor preservation.

9651 [1580]. Port Palapag, near
northern Samar. June 3, 1909. Length
100 mm. Yellow in head and breast
show sulphur after short immersion
in alcohol, ~~no~~ spots on lower portion
of body and yellow of dorsal and
caudal. Pale bar across entire body
and head posteriorly not so defined
above but merging into pale yellow or
gray of dorsal medially. Dorsal
spines very pale sulphur. Extreme margin
of soft dorsal reaches about half way
down opercle edge, narrowly white on
black line, then broader sulphur band.
Third sulphur bar crossing front of
cheek continued across front of eye.
Lips somewhat pale. Anal edge white,
not passing along vertical edge except
at rounded point, this on black band
divided medianly by obscure sulphur

U. S. N. M., No. 76869.

1769

In 918 fathoms.
Albatross Collection (D. 5084).
Length 268 mm. Type.

blackish, margin broadly whitish, lower edge with black submarginal band superimposed. Caudal base and most of caudal peduncle, at least posteriorly, blackish, fin largely brown, broad margin behind whitish with close blackish narrow submarginal band and another divides pale border from brown median color. Pectoral olivaceous. Ventral black.

This beautiful fish shows but little change with age and is not abundant in collections. Previously only known from Oceania.

Lionurus condylura (Jordan and ¹⁷⁷⁰Gilbert)

Hezumia condylura Jordan and Gilbert,
Bull. U. S. Fish Comm., vol. 22, p. 620,
pl. 4, fig. 2, 1902 (Aug. 1904) (type
locality: Suruga Bay, Japan,
207 to 257 fathoms; Suruga and
Sagami Bays; 110 to 265 fathoms).
— Jordan, Tanaka, Snyder, Journ.
College Sci. Tokyo, vol. 33, p. 413
(fig. 384 copied), 1913 (compiled).

Lionurus condylura Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. ⁽¹⁴⁵⁾195,
1916 (Bungo Channel; Kii Channel;
Suruga Gulf; Sagami Bay; 197 to
437 fathoms).

Depth $6\frac{3}{4}$ to 8; head $5\frac{4}{5}$ to $6\frac{3}{5}$,
width 2 to $2\frac{1}{8}$. Snout $3\frac{1}{3}$ to $3\frac{4}{5}$ in
head; eye $2\frac{4}{5}$ to $3\frac{1}{3}$, equals or
greater than snout, greater than
interorbital; preoral oblique, $1\frac{1}{3}$
to $1\frac{2}{5}$ in eye; maxillary reaches $\frac{2}{5}$
to $\frac{1}{2}$ in eye, length from front end

3 to $3\frac{1}{2}$ in head; teeth minute, simple, villiform, in bands in jaws of 4 or 5 irregular series, outer upper row little enlarged anteriorly; interorbital $4\frac{1}{8}$ to $4\frac{3}{5}$ in head, $1\frac{1}{3}$ to $1\frac{1}{2}$ in eye, low, nearly level or with slight depression each side. Gill rakers 1 + 7 short spinescent tubercles on second arch, $\frac{1}{3}$ of gill filaments, which $2\frac{1}{2}$ in eye.

Scales 138 in lateral line, of which about 10 forward of vent; 14 above, 22 below, 48 predorsal. Scales adherent, finely spinescent or velvety to touch, smaller on head than on body. Muzzle above spinescent, lower surface below infraorbital

1 to $1\frac{2}{5}$; ventral 1 to $1\frac{1}{8}$.

448

Broad pale brown band vertically from posterior predorsal region and front of spinous dorsal down till close above ventral base, embraces also all of postocular region, humeral region and pectoral base. Broad blackish band from upper interorbital, supra-occipital and front predorsal - down to eye, then over cheek below including all of lower preventral region, or lower face of chest; band bordered largely in front and behind by contrasted yellow line, latter strongly delimiting dark muzzle and invading front edge of iris. Interorbital olive; snout and chin largely dusky, though lips brownish. Scales on most of trunk and tail largely black, each with median pale to yellow spot, which on scales of back much larger. Soft dorsal brownish, margin broadly pale to whitish, with narrow submarginal dusky line. Anal largely

ridges smooth and naked.

1772

Scales with 3 to 10 parallel series of apical denticles, last spines extending beyond scale edge; circuli coarse.

D. II, 10 to II, 12 - 120? to end of broken caudal, second simple ray long as head (end broken), front edge with row of wide set minute denticles; interdorsal space $2\frac{2}{3}$ in head; A. 128?

(though at base of fin split most of rays broken out), fin much higher than low second dorsal; pectoral rays I, 18 to I, 21, fin $1\frac{2}{3}$ to $1\frac{4}{5}$ in head; ventral rays I, 11 to I, 16, fin $1\frac{2}{5}$ to $1\frac{2}{3}$ in head, first ray ending in filament.

Brown, lower sides of head

Depth $1\frac{1}{3}$ to $1\frac{2}{5}$; head $2\frac{2}{3}$ to $3\frac{1}{5}$, width $1\frac{7}{8}$ to 2.
Snout $2\frac{2}{5}$ to 3 in head from snout tip; eye 3 to $3\frac{3}{5}$,
 1 to $1\frac{1}{5}$ in snout, little greater than interorbital
in young to $1\frac{1}{2}$ in interorbital with age; maxillary
to nostrils, to front eye edge with age, $3\frac{1}{5}$ to $3\frac{1}{4}$
in head; interorbital 3 to $3\frac{1}{8}$, broadly convex.
Gill rakers 3 + 18, short points, $\frac{1}{6}$ of gill
filaments, which $1\frac{1}{5}$ in eye.

Scales 38 to 42 between gill opening and
caudal base; tubes to in lateral line;
8 or 9 scales above lateral line, 21 to 24 below.
Scales with 12 or 13 basal radiating striae;
apical denticles 61 to 101, with 5 to 7
transverse series of basal elements; circuli
fine.

D. XIII or XIII, 27, I or 28, I, fourth spine $1\frac{2}{3}$
to 2 in head, fourth ray $1\frac{4}{5}$ to 2; A. III, 21, I
to 25, I, third spine $1\frac{3}{5}$ to 1, fifth ray $1\frac{2}{5}$ to $1\frac{1}{2}$;
least depth of caudal peduncle $2\frac{1}{2}$ to 3; caudal
little convex behind, $1\frac{1}{3}$ to $1\frac{2}{5}$; pectoral

and body grayish. Under posterior portion of head, breast and belly dark to blackish. Iris gray. Inside mouth dark and of gill opening blackish.

Japan. A small species, many preserved specimens pale or light reddish brown to russet. The under surface of head, breast and belly most always dark. Often first dorsal pale yellowish brown. basally and like pectoral dusky terminally.

446

? Chaetodon bellicosus Quoy and Garniard,
Voy. Uranie, Zool., 1825, p. 383. Quoy.
(No description, passing reference).

Chaetodon superbus (Broussonet) Cuvier,
Hist. Nat. Poiss., vol. 9, 1831, p. ³²~~24~~. Ulen.
(Name in text.)

Citharodes collaris (non Bloch) Kaup,
Arch. Naturges., band 28, abth. 1, 1860, p. 141
(Tahiti).

Chaetodon collaris Günther, Journ. Mus.
Godeffroy, band 2-3, ^{left} 5-6, 1874, p. 40, plate
31, fig. d (Pannote). — Fowler, Occas.
Pap. Bishop Mus., vol. 8, no. 7, 1923, p. 384.
(Honolulu). — Fowler, Bishop Mus. Bull.,
no. 22, 1925, p. 34 (Samoa). — Fowler and
Ball, Bishop Mus. Bull., no. 26, 1925 (1926),
p. 18 (Wabai Island).

U. S. N. M., No. 50937. Oi Yawa,
N. 49° , W. 2.8 miles, off Honsu.

In 207 to 250 fathoms. May 12, 1900.
Albatross Collection (D. 3721). Length
195 mm. Type of Hezumia condylura.

U. S. N. M., No. 50472. Data like
preceding. Albatross Collection (D. 3721).
Length 110 to 147 mm. 4 examples.

U. S. N. M., No. 77214.

In 250 fathoms.

Albatross Collection (D. 5062).

Length 182 to 187 mm. 2 examples.

U. S. N. M., No. 77215.

October 15, 1906. (In 211 fathoms.)

Albatross Collection (D. 5066).

Length 147 to 170 mm. 4 examples.

445

Chaetodon reticulatus Cuvier.

Chaetodon reticulatus Cuvier, Hist. Nat. Poiss., vol. 7, 1831, p. ³²~~34~~, plate 171. Tahiti and Ulea. — Lesson, Voy. Coquille, Zool., 2 (1), 1830 (1831), p. 178, plate 30, fig. 2 (Tahiti). — Swainson, Nat. Hist. Arn., vol. 2, 1839, p. 211. — Günther, Cat. Fish. Brit. Mus., vol. 2, 1860, p. 22 (copied). — Kner, Reise Novara Fische, 1865, p. 271 (Tahiti). — Elera, Cat. Fauna Filip., vol. 1, 1895, p. 486 (copied). — Jordan and Seale, Bull. Bur. Fisher., vol. 25, 1905 (1906), p. 342 (Apia and Pago Pago). — Uhl, Arch. Naturges., band 89, abth. B, heft 5, 1923, p. 139 (Samoa and Jaluit).

U. S. N. M., No. 77216.

In 292 fathoms. October 23, 1906.
Albatross Collection (D. 5086).
Length 158 to 180 mm. 2 examples.
U. S. N. M., No. 77217.

In 235 fathoms. October 15, 1906.
Albatross Collection (D. 5065).
Length 115 to 190 mm. 2 examples.
U. S. N. M., No. 77218.

In 293 fathoms. October 15, 1906.
Albatross Collection (D. 5067). Length 200 mm.
U. S. N. M., No. 77219.

In 369 fathoms. October 25, 1906.
Albatross Collection (D. 5088). Length
135 mm.

444

22585 U.S.N.M. Yagami, Japan.
Japanese Government. Length 135 mm.

50427 U.S.N.M. Hong Kong, China.
P. L. Jung. Length 139 mm.

71290 U.S.N.M. Misaki, Yagami,
Japan. Albatross Collection 1906. Length
42 mm. As Chaetodon lunula.

71487 U.S.N.M. Tanegashima.
Albatross Collection. Length 48 to 67 mm.
2 examples. As Chaetodon lunula.

72112 U.S.N.M. Kagoshima, Satsuma.
Bureau of Fisheries. Length 113 to 145
mm. 2 examples.

U. S. N. M., No. 77220. Japan.

1776

1906.

Albatross Station (lost). Length 167 mm.

U. S. N. M., No. 77221.

In 440 fathoms. August 30, 1906.

Albatross Collection (D. 4972). Length 153 mm.

U. S. N. M., No. 77222.

In 332 fathoms. October 13, 1906.

Albatross Collection (D. 5061). Length 165 mm.

U. S. N. M., No. 77223.

In 297 fathoms. October 13, 1906.

Albatross Collection (D. 5059).

Length 123 to 187 mm. 3 examples.

443

7104 and 7105. Port San Pio Duinto,
Camiguin Island. November 11, 1908.
Length 167 to 173 mm.

6910. Santo Domingo, Batan. November
7, 1908. Length 174 mm.

7183. West coast of Palani Island.
November 18, 1908. Length 170 mm.

6936 to 6939, 6948, 6968 to 6970. West coast
of Sabtan Island. Length 163 to 173 mm.

674, A816, A1591, A1592. Hokenio, Voo
Wan, Formosa. January 29, 1910. Length
148 to 157 mm.

A1561, A1566, A1567. Van Wan, Kevaling
Bay, Formosa. January 25, 1910. Length
163 to 175 mm.

U. S. N. M., No. 77224.

1777

In

Albatross Collection (D. 4967). Length

133 mm.

slightly convex as expanded, $1\frac{1}{4}$ to $1\frac{1}{3}$;
 pectoral 1 to $1\frac{1}{8}$; ventral $1\frac{1}{8}$ to $1\frac{1}{3}$.

Brown, breast and abdomen below
 paler. Above lateral line 5 darker
 bands, parallel with its course, below
 13 or 14 horizontal, each ~~row~~ extending
 medially on scale row. Broad blackish
 brown band from predorsal, meeting its
 fellow and including most of eye and
 down across cheek to edge of gill opening,
 but not on chest; broad white band all
 along posterior border and narrow white
 band along front border below eye. Lips
 deep brown. Iris dark brown. Vertical
 fins dark brown like back; soft dorsal
 and anal each with pale to whitish submarginal
 line; caudal broadly pale behind, inner
 half of band yellowish. Paired fins
 dull brown.

Red Sea, India, East Indies, Formosa, China, Japan,
~~Calcutta~~

Lionurus darus Gilbert and Hubbs

Lionurus darus Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. (146) 197,
1916 (type locality: Suruga Gulf, Hondo,
197 fathoms).

Lionurus darus Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, pl. 10, fig.
1, 1916.

Depth 8; head $6\frac{2}{5}$, width $2\frac{2}{5}$.
Snout 3 in head; eye 3, greater than
snout or interorbital; maxillary
reaches $\frac{1}{4}$ in eye, length from
front end 3 in head; preoral nearly
vertical, length $4\frac{1}{3}$; mandibular
barbel slender, $1\frac{1}{3}$ in eye; teeth
villiform, minute, in 3 or 4 irregular
series in jaws; interorbital $4\frac{1}{5}$ in
head, low, nearly level. Gill rakers
2 + 7 low spinescent tubercles on second
arch, $\frac{1}{3}$ of gill filaments, which
 $2\frac{2}{5}$ in eye.

Scales 100 in lateral line to end of

broken tail, of which 10 forward of vent; 11 above, 25 below, 36 predorsal. Scales firmly adherent, finely spinulose or velvety to touch, on head equal to those on body. Scales with 10 or 11 parallel rows of slender spinules apically, last extended beyond hind scale edge; circuli moderate.

D. II, 10 - 148?, second simple ray (broken) with row of well spaced denticles along front edge, length $1 + \frac{1}{3}$ times head; interdorsal space 3 in head; A. 135?, much higher than low second dorsal; pectoral rays I, 18, fin $1\frac{3}{4}$ in head; ventral rays I, 8, fin $1\frac{3}{4}$.

Brown, becoming darker on

Depth $1\frac{1}{3}$ to $1\frac{2}{5}$; head $3\frac{1}{8}$ to $2\frac{7}{8}$, width 2 to $2\frac{1}{8}$, snout $2\frac{7}{8}$ to 3 in head; eye 3 to $3\frac{3}{5}$, $1\frac{1}{8}$ to $1\frac{1}{6}$ in snout, 1 to $1\frac{1}{8}$ in interorbital; maxillary $\frac{2}{3}$ to $\frac{3}{4}$ in snout, $3\frac{2}{3}$ to 4 in head; interorbital $3\frac{1}{4}$ to $3\frac{2}{3}$, broadly convex. Gill rakers 4+13, short points, $3\frac{1}{3}$ in gill filaments, which $1\frac{1}{2}$ in eye.

Scales 40 or 41 between gill opening and caudal base; tubes 36 to 38 in lateral line; 9 or 10 scales above lateral line, 15 or 16 below. Scales with 8 to 11 basal radiating striae, and 1 to 6 auxiliaries incomplete; apical denticles 123 to 160, with 12 to 22 series of transverse basal elements; circuli very fine.

D. XIV, 22, I or 23, I, fourth spine 2 to $2\frac{1}{3}$ in head, fourth ray $1\frac{1}{3}$ to $1\frac{4}{5}$; A. III, 17, I to 19, I, third spine 2 to $2\frac{1}{8}$, fourth ray $1\frac{2}{5}$ to $1\frac{1}{2}$; least depth of caudal peduncle $2\frac{7}{8}$ to $3\frac{1}{10}$; caudal truncate.

1780

under surface of head posteriorly,
breast and belly, last blackish
below. Iris dark gray. Inside
mouth pale and gill opening
brownish. Fins brown, dusky
basally.

Japan.

U. S. N. M., No. 76867.

In 197 fathoms.
Albatross Collection (D. 5060).
Length 132 mm. Type.

Chaetodon unifasciatus Gray, Cat.

Fish. Grown, vol. 2, 1854, p. 69. Indian Ocean.

Chaetodon parallelus Gray, l.c., p. 70.
Indian Ocean.

Chaetodon auripes Jordan and Snyder,
Annot. Zool. Jap., 1900, p. 90 (in Schlegel).
— Ahl, Arch. Naturg., band 89, abth. A,
Heft 5, 1923, p. 133 (Japan, Yedo).

Chaetodon collare var. duplicollis Ahl, l.c.,
p. 135. India.

Chaetodon collare var. duplicicollis Ahl,
l.c., p. 137. India.

Chaetodon collare var. lanerii Ahl, l.c., p.
135. Java and Hong Kong.

Chaetodon lunula ^{part} Snyder, Proc. U. S. Nat.
Mus., vol. 42, 1912, p. 422 (Misaki, Yamaguchi).

1781

Lionurus decimalis Gilbert and Hubbs

Lionurus decimalis Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
560, fig. 40, 1920 (type locality:
Palawan Passage, 3¹/₅ fathoms).

Depth $4\frac{2}{3}$ to 5; head 5 to $5\frac{3}{4}$,
width $1\frac{4}{5}$ to 2. Snout $3\frac{3}{4}$ to 4 in
head; eye 3, greatly exceeds snout,
subequal with interorbital; preoral
region nearly vertical, ^{length} $\frac{1}{4}$ in head;
maxillary reaches $\frac{1}{5}$ to $\frac{1}{4}$ in eye,
greatly inclined, length from front
end 3 to $3\frac{1}{2}$ in head; no barbel;
teeth minute in villiform bands in
jaws equally wide above and below,
of 5 irregular series; interorbital
 $3\frac{1}{5}$ to $3\frac{1}{4}$ in head, low, with rather
wide median depression. Gill rakers
2 + 7 short spinescent tubercles on
second arch, $\frac{1}{3}$ of gill filaments,
which $\frac{1}{2}$ of eye.

Scales 85 in lateral line to
caudal base, of which 5 forward of

Lionurus darus Gilbert and Hubbs

Lionurus darus Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. (146)
1917, ~~fig. 1~~, 1917 (type locality:
Suruga Gulf, Hondo, 197 fathoms).

Depth 8; head $6\frac{2}{5}$, width $2\frac{2}{5}$. Snout
3 in head; ^{eye 3,} greater than snout or
interorbital.

of vent; 12 above, 21? below, 30 predorsal. Scales partly adherent, finely spinescent, though spinules more developed on muzzle and infraorbital ridge, scales also equally large on head as on body. Scales with 6 slightly radiating rows of fine slender spinules apically; circuli moderate.

D. II, 11 - 87, second simple ray with row of minute wide set denticles along its front edge, long as head; interdorsal space 4 to $4\frac{1}{2}$ in head; A. 88, much higher than low second dorsal or 3? in head; pseudocaudal distinct, small, $1\frac{3}{5}$ in eye; pectoral rays I, 17 to I, 21, length $1\frac{2}{5}$ to $1\frac{1}{2}$? in head; ventral rays I, 9, fin 2? (damaged).

Timor, Ternate, Buru, Amboina,
Ceram, Banda).

Chaetodon ocellatus (Parkinson) Cuvier,
Hist. Nat. Poiss., vol. 7, 1831, p. 55. Tahiti.
(name in text.)

Chaetodon cordiformis Girollière, Fann.
Woodlark, 1857, p. 165. Woodlark Island.

Chaetodon sphenorhynchus Jenkins, Bull.
Bur. Fisher, vol. 19, 1889 (1901), p. 395; fig.
8. Honolulu.

Chaetodon unimaculatus subsp. interruptus
Ahl, Arch. Naturges., band 87, abth. A, heft
5, 1923, p. 142. Hawaii.

Brown, becoming neutral gray on lower sides of head and below neutral black, which color also extended on breast and belly. Iris grayish. Fins brown, ventrals dark or dusky.

Philippines. Known chiefly by its blunt head, with very short, ^{obtuse} snout.

U. S. N. M., No. 82667. Point Tabonan, S. 89° E., 33.5 miles (lat. 10° 57' 45" N., long. 118° 38' 15" E.), Palawan Passage. In 375 fathoms. December 27, 1908. Albatross Collection (D. 5343). Length 143 mm.

U. S. N. M., No. 82668. Same data as preceding. Length 151 mm. Type.

of India, pt. 1, 1875, p. 107 (Ceylon). —
Peters, Monatsb. Naturh. Mus. Berlin,
 1876, p. 437 (Mauritius). — Day, Fauna.
British India, vol. 2, 1889, p. 7. — Elera,
Cat. Fauna Filip., vol. 1, 1895, p. 455 (Luzon,
 Manila, Cavite). — Evermann and Seale,
Bull. Bur. Fisher., vol. 26, 1906 (1907), p.
 97 (Bacon). — Uhl, Arch. Naturges., band 89,
 abth. A, Heft 5, 1923, p. 140 (type). — Fowler,
Bishop Mus. Bull., no. 12, 1925, p. 12 (Guam),
 p. 27 (Hawaii), p. 34 (Samoa). — Fowler and
Ball, Bishop Mus. Bull., no. 26, 1925 (1926),
 p. 17 (Johnston Island).

Chetodon unimaculatus Bonnaterre, Tabl.

Ichth., 1788, p. 88, plate 94, fig. 387 (Japan).

Citharoedus unimaculatus Kaup, Arch.

Naturges., band 26, abth. 1, 1860, p. 145.

Tetragnopterus (Lepidochaetodon) unimaculatus

Bleeker, Atlas Ichth. Ind. Néerl., vol. 9,

1877, p. 45, plate (13) 375, fig. 5 (Java, Volos,

Lionurus evides Gilbert and Hubbs

Lionurus evides (Gilbert and Hubbs, Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 557, fig. 39, 1920 (type locality: vicinity of Sibuko Bay, Borneo, 260 fathoms; between Gillolo-Malayan, 298 fathoms). — Weber and Beaufort,

Fishes Indo Austral. Archip., vol. 5, p. 75, 1929 (compiled).

Depth 7 (to end of broken tail); head 6, width $2\frac{1}{4}$. Snout $3\frac{3}{5}$ in head; eye $3\frac{3}{5}$, 1 in snout, 1 in interorbital; maxillary reaches $\frac{2}{3}$ in eye, length from front end equals eye; slender mandibular barbel .2 in eye; teeth fine, even, in villiform bands in jaws, in 4 irregular rows above and 5 or 6 below, mandibular bands much wider; interorbital $3\frac{1}{3}$ in head, low, level. Gill rakers 0 + 7 to 9 short spinescent tubercles on second arch, $\frac{1}{4}$ of gill filaments, which $1\frac{4}{5}$ in eye.

Scales 140? in lateral line to end of broken caudal, of which 7 forward of vent; 8 to 10 above, 20? below, 33 predorsal. Scales adherent, finely spinescent or rough velvety to touch, though spinules more prominent on snout end and infraorbital ridges; scales on head slightly smaller than largest body scales. Scales with 10 parallel rows of spinules apically, of which most posterior project beyond scale edge; circuli moderate.

D. II, 9 to II, 11 - 10? (to end of broken tail), second simple dorsal ray slender, with row of small, wide-set front denticles and terminally ending in filament nearly long as head, interdorsal space

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Chaetodon unimaculatus Bloch.

Chaetodon unimaculatus Bloch, Naturges.
Natl. Fisch., band 3, 1787, p. 75, plate 201,
fig. 1. East Indian Collection. — Gmelin,
Syst. Nat. Linn., 1789, p. 1258 (India). —
Walbaum, Arted. Pisc., vol. 3, 1792, p. 439
(on Bloch). — Forster, Faun. Indica, 1795, p.
15. — Schneider, Syst. Ichth. Bloch, 1801,
p. 221 (East Indies). — Cuvier, Hist. Nat.
Pois., vol. 7, 1801, p. 55⁷² (Tahiti). — Valenciennes,
Regne Animal Cuv. Ill., 1839, ~~with~~ plate 39,
fig. 3 ~~with~~. — Günther, Cat. Fish.
Brit. Mus., vol. 2, 1860, p. 11 (Amboina). —
Guichenot, Ann. Soc. Hist. Nat. Cherbourg,
vol. 2, series 2, 1866, p. 145 (Madagascar).
— Playfair, Fishes of Zanzibar, 1866, p. 32
(Zanzibar). — Günther, Journ. Mus.
Godeffroy, band 2-3, ^{left} 5-6, 1874, p. 37 (Bonham
Island, Tahiti, Samoa). — Day, Fishes

$2\frac{3}{4}$ in head; A. 108? (to end of broken tail), fin much higher than low second dorsal; pectoral rays $\underline{\text{I}}$, 19 to $\underline{\text{I}}$, 21, fin $1\frac{3}{5}$ in head; ventral $\underline{\text{I}}$, 10 to $\underline{\text{I}}$, 14, fin $1\frac{1}{5}$, first ray ending in filament.

Brown, becoming gray or dark neutral gray on sides and under surface of head, breast and belly, below nearly black. Inside mouth and gill opening blackish. Iris gray. Fins pale brown, ventrals dark or dusky basally.

East Indies.

U. S. N. M., No. 78231. Mabal Island (NW.) N. 3° W., 2.8 miles (lat. $4^{\circ}12'10''$ N., long. $118^{\circ}38'08''$ E.), Sibuko Bay, Borneo. In 260 fathoms. September 29, 1909. Albatross Collection (D. 5589). Length 153 mm. Type.

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Chaetodon dahl Ahl.

Chaetodon dahl Ahl., Arch. Naturges.,
band 89, abth. A, heft 5, 1923, p. 143,
plate 1, fig. 3. Ralum, Bismark Archipelago.

Body rounded. Snout pointed. Eye greater
than snout. Preopercle weakly denticulate.
Scales 32 laterally, 5 above, 13 below.
D. XIII, 23; A. III, 19 or 20; soft vertical
fins rounded. Yellowish, darker on back.
Blackish brown ocular band from nape
to lower edge of interopercle. Paired fins
~~clear~~ Soft dorsal with dark spot. Soft
dorsal and anal with submarginal dark
line and each with white edge. Caudal
base with black streak. Paired fins
clear. Length 29 mm. (Ahl.)

1787

Lionurus fasciatus (Weber)

Macrurus fasciatus Weber, Siboga
Exped., vol. 57, p. 157 (type locality:
lat. $7^{\circ}15'S.$, long. $115^{\circ}15.6'E.$, Madura
Sea, 289 meters; Arafura Sea, 204
meters). — Weber and Beaufort, Fishes
Indo Austral. Archip., vol. 5, p. 73,
fig. 15, 1929 (types).

Macrurus vittatus Weber, Siboga
Exped., vol. 57, pl. 1, fig. 5, 1913.

Lionurus vittatus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 559,
1920 (copied).

Lionurus filicauda (Günther)

Coryphaenoides filicauda Günther, Ann. Mag. Nat. Hist., ser. 5, vol. 2, p. 27, 1878 (type locality: deep seas both sides of South America, 1375 to 2650 fathoms).

Macrurus filicauda Günther, Rep. Voy. Challenger, vol. 22, p. 141, pl. 34, fig. B, 1887 (types; Antarctic Ocean; 1375 to 2650 fathoms).

Macrurus (Lionurus) filicauda Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 391, 1906 (reference).

Lionurus filicauda Goode and Bean, Oceanic Ichth., p. 409, pl. 98, fig. 342, 1895 (copied). — Jordan and Evermann, Bull. U. S. Nat. Mus., no. 47, pt. 3, p. 2592, 1898 (copied). — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 396, 1899 (reference). — Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 146, 1916 (reference).

Lionurus infranudus Gilbert and Hubbs

Lionurus infranudus Gilbert and Hubbs,
Bull. U. S. Nat. Mus., No. 100, vol. 1, p. 555,
fig. 38, 1920 (type locality: lat. $4^{\circ}6'50''N$,
long. $118^{\circ}47'20''E$, Sibuko Bay, Borneo,
347 fathoms). — Weber and Beaufort,
Fishes Indo Austral. Arch., vol. 5, p.
74, 1929 (compiled).

Depth $7\frac{1}{5}$; head $5\frac{1}{10}$, width 2.
Snout $3\frac{1}{6}$ in head; eye $3\frac{4}{5}$, $1\frac{1}{8}$ in
snout, greater than interorbital;
maxillary reaches $\frac{1}{2}$ in eye, length
from front end $3\frac{2}{3}$ in head;
mandibular barbel $1\frac{1}{4}$ in eye; teeth
fine, even, in broad villiform
bands in jaws, of 7 irregular series,
bands equally wide; interorbital 5
in head, low, nearly level. Gill
rakers 0 + 6 short spinescent knobs
on second arch, $\frac{1}{3}$ of gill filaments,
which $2\frac{1}{3}$ in eye.

Scales 116 in lateral line to
pseudocaudal, of which 17 forward

of anal origin; 10 above, 20?
 below, 40? predorsal. Scales
 firmly adherent, finely spinulose,
 equally large posteriorly on head
 as on body. Scales with about
 12 series of rather long slender
 spinules apically, most posterior
 extending beyond scale edge;
 circuli moderate.

D. II, 12 - 100, second simple
 ray slender, with row of wide
 set small denticles along its
 front edge and terminally ends
 in slender filament, length $3\frac{1}{5}$
 in total fish; interdorsal space
 3 in head; A. 91, fin much
 higher than low second dorsal;
 pseudocaudal $1\frac{1}{4}$ in eye; pectoral
 rays I, 20, fin $1\frac{4}{5}$ in head;
 ventral rays I, 11, fin $1\frac{2}{5}$ in head,

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Chaetodon dayi Uhl

Chaetodon dayi Uhl, Arch. Naturg., band 89, abth. II, Heft 5, 1923, p. 127 (on Chaetodon dayi, Fishes of India, pt. 1, 1875, p. 109 = Jerdon, Madras. Journ. Lit. Sci., 1851, p. 134, Telicherry).

D. XIV, 26; A. III, 23. Lavender. Line from first dorsal to muzzle yellow. Chin, throat and lower part of face and line from top of opercle to pectoral base orange. Spinous dorsal membranes yellow. Blue spot continues in line to upper part of soft dorsal and also on anal. Soft dorsal green with yellowish edge. Anal and ventral yellow. Caudal lavender, rays purple, margined on sides with yellow and exteriorly with orange. Lips red. Length 152 mm. (Jerdon.)

A doubtful species, likely near Chaetodon nigropunctatus.

first ray ending in short filament.

Brown, becoming neutral gray to blackish on under surface of head, breast and belly. Jaws and under surface of snout pale brown. Iris grayish. Inside mouth and gill openings black. Fins brownish, first dorsal and paired fins blackish brown basally.

East Indies.

U. S. N. M., No. 82669. Sipadan Island (M.) West, 9.4 miles (lat. $4^{\circ}06'50''$ N., long. $118^{\circ}47'20''$ E.), Sibuko Bay, Borneo. In 347 fathoms. September 28, 1909. Albatross Collection (D. 5586). Length 203 mm.

Chaetodon nigropunctatus Sauvage.

Chaetodon (Tetragonopterus) nigropunctatus
Sauvage, Bull. Soc. Philomath. Paris, 1880,
p. 222. Muscat.

Choetodon (Tetragonopterus) nigropunctatus
Sauvage, Hist. Nat. Madagascar, Poiss., 1891,
p. 257, plate 29, fig. 2 (type).

Chaetodon obscurus Boulenger, Proc. Zool.
Soc. London, 1887, p. 657. Muscat.

Upper profile of head concave. Snout
longer than eye. Preopercle not denticulate.
Scales 38 in lateral line, 5 above, 17 or 18
below. D. XIII, 22; A. III, 18; soft dorsal and
anal angular, caudal truncate. Dark
brown, each scale with blackish center. Dorsal
and anal spines, edges of soft dorsal and anal
and ventral blackish. Caudal black, with
broad yellow edge. Length 140 mm. (Boulenger.)

Lionurus leonis Barnard

1792

Lionurus leonis Barnard, Ann. Mag.
Nat. Hist., ser. 9, vol. 15, p. 503, 1925
(type locality: off Cape Point, 90 to
345 fathoms); Ann. South Afric.
Mus., vol. 21, pt. 1, p. 349, pl. 13,
fig. 6, June 1925 (types).

Lionurus liolepis (Gilbert)

1793

Macrurus (Lionurus) liolepis Gilbert,
Proc. U. S. Nat. Mus., vol. 13, p. 117,
1890 (type locality: off southern
California, 603 fathoms).

Macrurus liolepis Garman, Mem. Mus.
Comp. Zool., vol. 24, p. 199 (396), 1899
(lat. 16° to 27° N., long. 99° to 110° W., 660 to
905 fathoms).

Lionurus liolepis Goode and Bean,
Oceanic Ichth., p. 409, 1895 (copied).
— Jordan and Evermann, Bull. U. S.
Nat. Mus., no. 47, pt. 3, p. 2593, 1898
(copied). — Gilbert and Hubbs, Proc.
U. S. Nat. Mus., vol. 51, p. 146, 1917
(reference):

1794

Depth $5\frac{3}{4}$ to $6\frac{1}{5}$; head $4\frac{3}{4}$ to $4\frac{4}{5}$,
width $1\frac{7}{8}$ to 2. Snout 3 to 4 in
head; eye $3\frac{3}{4}$ to $4\frac{1}{4}$, little greater
than snout to $1\frac{1}{8}$ in snout; equals
interorbital; maxillary reaches
 $\frac{3}{5}$ to $\frac{2}{3}$ in eye, length 3 to $3\frac{1}{5}$
in head; mandibular barbel $1\frac{1}{4}$
to $1\frac{1}{3}$ in eye; preoral space oblique,
well inclined, length $5\frac{3}{5}$ to $5\frac{3}{4}$
in head; teeth minutely villiform,
even, in bands in jaws, of 3 or 4
irregular series above and 4 to 6
below with lower band wider;
interorbital $4\frac{1}{4}$ to $4\frac{2}{5}$ in head,
broad, low, depressed medially.
Gill rakers 2 + 7 short knobs on
second arch, $\frac{1}{4}$ of gill filaments,
which $\frac{1}{2}$ of eye.

Scales $16\frac{1}{2}$ in lateral line,
of which 16 forward of vent; 8

Body with darker streaks, descending obliquely forward. Vocular band much narrower than eye, reaches from dorsal origin still across chest. Large black, white edged spot on each side of tail, occupying its whole length. Dorsal and anal with whitish edge. Caudal with narrow blackish streak across middle. Ventral white.

(Günther.)

above, 26 below, 38 predorsal.

Scales very deciduous, mostly fallen, minutely spinescent and equally large on head as on body. Scales with 5 or 6 series of small spinules or denticles apically, none extended beyond hind scale edge; circuli moderate.

D. II, 10 - 13 $\frac{1}{2}$, second simple ray smooth and extended terminally in filament, $1\frac{3}{4}$ to 2 in head; interdorsal space $2\frac{1}{2}$ to $2\frac{4}{5}$; A. 128, much higher than low second dorsal; pectoral rays I, 20 or I, 21, fin $1\frac{4}{5}$ to $2\frac{1}{3}$ in head; ventral rays I, 9 to I, 11, fin $2\frac{1}{5}$ to $2\frac{3}{4}$ in head.

Brown, becoming dark or chocolate to neutral brown on under surface of head, and breast

Chaetodon ocellicauda Cuvier.

460

Chaetodon ocellicaudus Cuvier, Hist. Nat. Poiss.,
vol. 7, 1831, p. ⁶⁹53. no locality (Voyage de Peron).
— Kaup, Arch. Naturges., band 26, abth. 1, 1860,
p. 150.

Chaetodon ocellicauda Günther, Cat. Fish. Brit.
Mus., vol. 2, 1860, p. 27 (Indian Ocean). —

Playfair, Fishes of Zanzibar, 1865, p. 35
(Zanzibar). — Von Martens, Preuss. Exped. Ost
Asien, 1876, p. 388 (Amboina). — Schmeltz,
Mus. Godeffroy Cat., vol. 6, 1877, p. 13 (Red Sea).
— Meyer, Ann. Soc. Espan. Hist. Nat. Madrid,
vol. 14, 1885, p. 17 (Siao, Sanyi; Ternate). —
Elera, Cat. Faun. Filip., vol. 1, 1895, p. 486
(Luzon, Cavite). — Ahl, Arch. Naturges.,
band 89, abth. 1, heft 5, 1923, p. 131 (Matupi?,
Rulum, Amboina, New Guinea).

and belly. Iris grayish. Inside mouth brownish and gill opening dusky to blackish. Fins brownish, ventrals darker.

Off California.

U. S. N. M., No. 44271. Lat. $33^{\circ}49'45''$ N., long. $119^{\circ}24'30''$ W., off southern California. In 603 fathoms. February 12, 1889. Albatross Collection (D. 2980). Length ^{mm,} 243, type of macrurus (Lionurus) liolepis. Also 2 paratypes, same data, 218 to 268 mm.

Ventral pale orange on lower surface, ⁴⁵⁹white above, spine orange.

727, 937, 938. Cebu market. April 5, 1908.
Length 114 to 134 mm.

451. Doc Can Island. January 7, 1910.
Length 153 mm. [2183.]

366 and 367. Malapascua Island.
March 16, 1909. Length 120 to 145 mm.
[1368.]

4724. Pilas Island. September 12, 1909.
Length 123 mm.

19552. Singaan Island. September 21, 1909.
Length 107 mm.

55944 U.S.N.M. Buluan, Philippines.
Bureau of Fisheries. Length 125 mm. [4342.]

U. S. N. M., No. 46472. Same ¹⁷⁹⁷
data as type. Length 115 to 225 mm.
16 examples.

U. S. N. M., No. 46521, Lat. $18^{\circ}17'30''$
N., long. $114^{\circ}43'15''$ W., Revillagigedo
Islands. In 460 fathoms. March 6,
1889. Albatross Collection (D. 2992).
Length 120 to 195 mm. 5 examples,
in poor preservation.

U. S. N. M., No. 46597.

Albatross Collection: Length 283 mm.
U. S. N. M., No. 57862.

Albatross Collection (). Length
168 to 350 mm. 6 examples in poor
preservation. All dark brown, with
dark or neutral black chest and
abdomen.

posterior anal base, within an orange bar, more narrow; spines above scaled region cadmium orange, incised portions of membranes yellow; from fifth or sixth spine upper scaled part cadmium orange, color expanding broadly on soft fin to include all except narrow yellow edge, continuation of spinous membrane color which rests on gray and black line, latter not extending down all of vertical edge. Anal like dorsal but basal half of soft fin posteriorly yellow instead of orange. Caudal peduncle yellow behind dusky, base of caudal orange, terminal part of fin dusky hyaline with very narrow yellow tip in fork and yellow crescent extending down from tip of each lobe through outer portion of orange. Pectoral dusky hyaline.

U. S. N. M., No. 75628.

1798

Albatross Collection (D. 4403). Length
213 to 252 mm. 2 examples.
U. S. N. M., No. 75629.

In 4 fathoms.
Albatross Collection (D. 4516). Length
184 mm.
U. S. N. M., No. 75630.

Albatross Collection (D. 4416). Length
122 to 248 mm. 7 examples.
U. S. N. M., No. 75631.

Albatross Collection (D. 4423). Length
130 to 280 mm. 4 examples.

shoulder, formed of round orange dots, 1 on each scale and $\frac{1}{4}$ or less of pupil diameter; below angle of gill opening stripes pale purplish, 3 with origin above pectoral base, 4 behind base, 5 between pectoral and anal bases and 1 behind anal; stripes broken above and posteriorly into round dots of same color, 1 on each scale, but not quite regular and $\frac{1}{3}$ to $\frac{1}{2}$ of pupil diameter. Broad yellow stripe medially on ventral surface, begins shortly behind ventrals and merges with color of anal fin. Dorsal base with black bar, rather obscured by general yellow color anteriorly on spinous portion, becomes distinct posteriorly extending downward into scaled portion of body, crosses caudal peduncle and extends along about $\frac{2}{3}$

U. S. N. M., No. 75632.
Albatross Collection (D. 4317).

~~Albatro~~

Length 125 to 263 mm. 10 examples.
Albatross Collection (D. 4335).

Length 195 to 260 mm. 7 examples.
Rather dark brown.

U. S. N. M., No. 75633.

Albatross Collection (D. 4453). Length
111 mm.

U. S. N. M., No. 75634.

Albatross Collection (D. 4405). Length
133 to 137 mm. 2 examples.

A 506. Balukbaluk Island. September
12, 1909. Length 153 mm. General color
of side silvery gray, slight olivaceous
shade above and somewhat lavender
below, without yellow shown in Bleeker's
plate. Ocular band blackish above, broadly
bordered with orange behind running
broadly into nape; below eye yellow
narrower than above, ending at edge of
cheek or obscurely running across ^{inter} opercle,
probably dusky in life. Two narrow
interocular bars orange and stripe
of same along forehead to eye on either
side some distance before ocular bar;
broader stripe through nostrils with
dash on premaxillary below its end.
Opercular flap orange. Sides of body
crossed obliquely by upward curved
bars, first 4 not including few spots
along upper edge of ocular bar on

U. S. N. M., No. 75635.

1800

Albatross Collection (D. 4333). Length
100 mm.

U. S. N. M., No. 75636.

Albatross Collection (D. 4307). Length
104 to 151 mm. 3 examples.

U. S. N. M., No. 75637.

Albatross Collection (D. 4415). Length
177 to 335 mm. 4 examples.

U. S. N. M., No. 75638.

Albatross Collection (D. 4428). Length
183 to 315 mm. 16 examples.

diffuse streak which little more arched.

East Indies, Philippines. Bleeker had 9 specimens from 3 localities, the largest 160 mm. The species is quite constant and shows but slight variation.

U. S. N. M., No. 75640.

1801

Albatross Collection (D. 4351). Length
205 to 347 mm. 7 examples.

U. S. N. M., No. 77495.

Albatross Collection (D. 333). Length
143 to 157 mm. 3 examples.

U. S. N. M., No. 87580.

Albatross Collection (D. 5683). Length
140 mm.

emarginate, $1\frac{1}{5}$ to $1\frac{1}{2}$; pectoral $1\frac{1}{3}$ to $1\frac{2}{5}$; ventral $1\frac{2}{5}$ to $1\frac{2}{3}$.

Largely pale or yellowish brown, each scale above lateral line before its arch with small, pale, median spot. Brown band, narrow at first, along base of spinous dorsal and soft dorsal, where broader, across tail and front of caudal peduncle down along soft anal base, where narrowing. Below lateral line each scale with narrow slightly darker line following in median course of scale rows. Brown band from predorsal down to eye, with pale bordering line in front and behind; below eye pale band across cheek, narrowing below. Broadly pale diffuse interocular band. Soft dorsal and anal each with broad pale edge and submarginal dark line. Caudal broadly whitish behind, inner edge with brown line next to pale

1801

Lionurus microlepis (Günther)

Coryphaenoides microlepis Günther,
Annu. Mag. Nat. Hist., ser. 5, vol. 2, p.
26, 1878 (type locality: off Matulsa,
Fiji, 215 fathoms).

Maerurus microlepis Günther, Rep. Voy.
Challenger, vol. 22, p. 142, 1887 (type).
— Goode and Bean, Oceanic Ichth.,
p. 409, 1895 (name).

Lionurus microlepis Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146, 1916
(name). — Whitley, Journ. Pan Pacific
Inst., vol. 2, no. 1, p. 4, Jan.-March 1927
(reference). — Fowler, Mem. Bishop
Mus., vol. 11, no. 5, p. 320, 1931
(compiled).

1802

Lionurus nigromaculatus (McCulloch)

Macrourus nigromaculatus McCulloch,
Rec. Austral. Mus., vol. 6, no. 5, p.
346, pl. 63, figs. 1-1a, July 18, 1907
(type locality: 35 miles east of
Sydney, New South Wales, 800 fathoms).

Lionurus nigromaculatus (Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146, 1916
(reference)). — Barnard, Ann. South
African Mus., vol. 21, pt. 1, p. 348,
June 1925 (off Cape Point and East
London, 150 to 300 fathoms). — McCulloch,
Austral. Mus. Mem., vol. 5,
pt. 1, p. 126, June 29, 1929 (compiled).

1803

Lionurus parvipes (Smith and Radcliffe)

Macrourus parvipes Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 43, p. 124,
pl. 28, fig. 1, 1912 (type locality:
Gomomo Island, Dutch East Indies,
1262 fathoms).

Lionurus parvipes Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146,
1916 (reference); Bull. U. S. Nat. Mus.,
no. 100, vol. 1, p. 562, 1920 (Gulf of
Tomini, Celebes; Pitt Passage;
Macassar Strait; 1089 to 1262 fathoms).

— Weber and Beaufort, Fishes Indo
Austral. Arch., vol. 5, p. 75, 1929
(compiled).

1804

Lionurus proximus (Smith and Radcliffe)

Macrourus proximus Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 43, p. 119, pl.
26, fig. 2, 1912 (type locality: Loyod Bay,
Leyte, 502 fathoms).

Lionurus proximus Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. (146) 201,
1916 (Eastern Sea; Bungo Channel; off
Shio, Misaki; lat. $34^{\circ}19'N.$, long. $137^{\circ}55'$
E.; 253 to 544 fathoms); Bull. U. S.
Nat. Mus., no. 100, vol. 1, p. 554, 1920
(north of Leyte; between Siquijor and
Bohol; 392 to 554 fathoms).

Macrourus nasutus (not Günther)
Jordan and Gilbert, Bull. U. S. Fish
Comm., vol. 22, p. 616, 1902 (1904) (Izu
specimen).

U. S. N. M., No. 77225.

1805

September 1, 1906. (In 507 fathoms).
Albatross Collection (D. 4980).

Length 270 to 285 mm. 6 examples,
in poor preservation.

U. S. N. M., No. 77226.

In 544 fathoms. August 31, 1906.
Albatross Collection (D. 4977).

Length 241 mm.

U. S. N. M., No. 77227.

Albatross Collection (D. 4968).

Length 120 mm.

depth $1\frac{3}{5}$ to $1\frac{3}{4}$; head $2\frac{3}{4}$ to 3, width $2\frac{1}{4}$ to $2\frac{2}{5}$.
Snout $2\frac{1}{4}$ to $2\frac{1}{3}$ in head from upper jaw tip; eye $3\frac{2}{5}$ to $3\frac{1}{2}$, $1\frac{2}{5}$ to $1\frac{2}{3}$ in snout, little greater than interorbital in young to equal to interorbital with age; maxillary $\frac{3}{5}$ to $\frac{2}{3}$ of snout, $3\frac{1}{2}$ to $3\frac{3}{4}$ in head; interorbital $3\frac{4}{5}$ to 4, broadly convex. Gill rakers 4 + 13, short points, $\frac{1}{6}$ of gill filaments, which $1\frac{1}{4}$ in eye.

Scales 32 to 34 between gill opening and caudal base; tubes 28 to 30 in lateral line; 7 scales above lateral line, 13 or 14 below. Scales with 15 to 19 basal radiating striae; apical denticles 115 to 160, with 10 to 17 transverse series of basal elements; circuli fine.

D. XII, 20, I or 21, I, fourth spine 2 to $2\frac{1}{3}$ in ^{total} head, ^{length} fourth ray $1\frac{3}{4}$ to $1\frac{4}{5}$; A. III, 18, I or 19, I, third spine $1\frac{3}{4}$ to 2, fourth ray $1\frac{2}{3}$ to $1\frac{4}{5}$; least depth of caudal peduncle 3 to $3\frac{1}{5}$; caudal with hind edge slightly hinate or

1806

Lionurus pudens (Gilbert and Thompson)

Lezurmia pudens (Gilbert and Thompson,
in Thompson, Proc. U. S. Nat. Mus.,
vol. 50, p. 472, pl. 5, fig. 2, 1916
(type locality: lat. $38^{\circ} 08' S.$, long. $75^{\circ} 53' W.$, off Lota, Chile, 677 fathoms).

Lionurus pudens (Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146,
1916 (reference).

Depth 7; head 5, width 2. Snout
to eye $3\frac{4}{5}$ in head, $1\frac{1}{10}$ in orbit; eye
 $4\frac{1}{4}$ in head, $1\frac{1}{5}$ in snout, 1 in
interorbital; orbit $3\frac{1}{2}$ in head, 1
in snout; preoral length slightly
inclined from vertical, length $5\frac{1}{5}$
in head; maxillary reached $\frac{1}{4}$ in eye,
length from front end $3\frac{1}{5}$ in head;
mandibular barbel $1\frac{1}{2}$ in orbit;
teeth in rather broad villiform
bands in jaws, of 5 or 6 irregular
rows; interorbital 5 in head, $1\frac{1}{4}$
in orbit. Gill rakers 2 + 8 low

spinescent tubercles on second arch,
 $\frac{1}{3}$ of gill filaments, which $\frac{1}{3}$ of
orbit.

Scales (pockets) 108? in lateral
line; 8 above, 18? below, 40?
predorsal forward to front of
snout of which 20 forward
opposite hind orbit edge. Scales
with 10 or 11 parallel apical
rows of spinules, last not
extending to hind edge of scale;
circuli moderate, obsolete apically.

D. II, 10 - 117, second simple
ray slender, with row of antrorse
denticles along front edge, length
 $1\frac{2}{5}$? in head; interdorsal space
3; A. 112, fin height $4\frac{1}{2}$? in
head; pectoral rays I, 22, fin 2?
in head; ventral rays I, 10, fin
 $2\frac{1}{4}$?

452

Chaetodon selene Bleeker.

Chaetodon selene Bleeker, Nat. Tijds. Ned.
Indië, deel 5, 1853, p. 76. Luwajung, Solor.
— Günther, Cat. Fish. Brit. Mus., vol. 2, 1860,
p. 30 (Amboina). — Van Martens, Preuss. Exped.
Ost Asien, 1876, p. 388 (Yokohama). —
Boulenger, Proc. Zool. Soc. London, 1887, p. 657
(Muscat, East Arabia). — Evermann and Seale,
Bull. Bur. Fisher., vol. 26, 1906 (1907), p. 96
(Buluan). — Jugumeyer, Abhand. K. Bayer.
Akad. Wiss., band 26, abth. 6, 1913, p. 11
(Oman). — Uhl, Arch. Naturges., band 89,
abth. B, heft 5, 1923, p. 119 (no locality).
Tetragnopterus (Chaetodontops) selene
Bleeker, Atlas Ichth. Ind. Néerl., vol.
9, 1877, p. 44, plate (15) 377, fig. 5 (Celebes,
Solor, Amboina).

1888

Pale brown. Muzzle paler than body. Under surface of head, branchiostegal region, chest, breast and belly blackish brown to neutral black. Iris grayish. Inside mouth pale. Inside gill opening largely whitish, dark above. Fins pale. Ventrals dusky to blackish, especially ~~terminally~~ basally.

Chile.

U.S.N.M., No. 76860. Lat. $38^{\circ}8'S.$,
long. $75^{\circ}53'W.$, off Chile. In 677
fathoms. February 14, 1888.
Albatross Collection (D. 2791). Length
171 mm. Type of Hezumia pudens.

streak, orange on lower vertical edge,
but no small spots on anal base and
caudal peduncle posteriorly. Tip of
caudal hyaline, gray central band
broad, reaches almost to base.

54225 U.S. N.M. Apia, ~~Tonga~~, Bureau
of Fisheries, 4 examples. Length 64 to 147
mm.

Lionurus pumiliceps (Alcock)

1809

Macrurus pumiliceps Alcock, Journ. Asiatic Soc. Bengal, vol. 63, pt. 2, p. 125, 1894 (type locality: Laccadive Sea, 719 fathoms); Illustrat. Zool. Investigator, pt. 3, pl. 16, fig. 3, 1895. — Garman, Mem. Mus. Comp. Zool., vol. 24, p. 396, 1899 (reference).

Macrurus (Macrurus) pumiliceps Alcock, Descript. Cat. Deep Sea Fishes Ind. Mus., p. 113, 1899 (Arabian Sea between Maldives and Travancore, 719 fathoms). — Brauer, Deutsch. Tiefsee Exped. Valdivia, vol. 15, p. 262 (Agulhas Bank; east coast of Africa; 500 to 1242 meters), p. 389 (reference), 1906.

Lionurus pumiliceps Gilbert and Hubbs, Proc. U. S. Nat. Mus., vol. 51, p. 146, 1917 (reference); Bull. U. S. Nat. Mus., no. 100, vol. 1, p. 559, 1920 (off west Luzon; east Luzon; Sibuko Bay, Borneo; Gulf of Tomini, Celebes; Buton Strait; Gulf of Boni; Flores

Sea; Macassar Strait; 400 to 900 fathoms.
 — Barnard, Ann. South Afric. Mus.,
 vol. 21, pt. 1, p. 347, June 1925 (compiled).

— Weber and Beaufort, Fishes Indo
 Austral. Archip., vol. 5, p. 78, 1929
 (compiled).

Depth 7 to $8\frac{1}{2}$; head $6\frac{1}{4}$ to $6\frac{3}{4}$,
 width $2\frac{1}{5}$ to $2\frac{1}{4}$. Snout $3\frac{1}{8}$ to $3\frac{1}{5}$
 in head; eye $3\frac{1}{4}$ to $3\frac{2}{5}$, 1 to $1\frac{1}{10}$ in
 snout; preoral profile nearly vertical,
 length $4\frac{3}{4}$ to 5 in head; maxillary
 reaches $\frac{1}{5}$ to $\frac{1}{4}$ in eye, length
 from front end 3 to $3\frac{1}{5}$ in head;
 mandibular barbel $1\frac{1}{2}$ to $1\frac{3}{4}$ in eye;
 teeth minute, in villiform bands in
 jaws, - of 5 or 6 irregular series;
 interorbital 4 to $4\frac{1}{5}$ in head, $1\frac{1}{5}$
 to $1\frac{1}{4}$ in eye, low, depressed concavely
 in middle. Gill rakers 0 + 8 low &
 spinescent tubercles on second arch,
 $\frac{1}{3}$ of gill filaments, which $\frac{1}{3}$ of eye.

Scales 167 in lateral line; 8 or 9
 above, 14 or 15 below, 40 predorsal

forward to front of snout, of which 20 forward opposite hind orbit edge. Scales with 6 to 8 slightly converging rows of rather long apical spinules, last extending little behind hind edge of scale; circuli moderate, complete.

D. II, 11 or II, 12 - 130, second simple ray pungent, with row of antrorse denticles along its front edge, length $1\frac{1}{3}$ to $1\frac{2}{5}$ in head; interdorsal space $1\frac{4}{5}$ to $2\frac{2}{5}$; A. 118 to 133, fin height greater than second dorsal or 5? in head; pectoral rays I, 19 or I, 21, fin $1\frac{1}{2}$ in head; ventral rays I, 10 to I, 12, fin $1\frac{4}{5}$ to 2, first ray ending in filament.

9020. Langa Point, Luzon.

471

653 and ~~654~~ June 24, 1909.

Length ^{to 165} 150 mm.

1257. Maagnas, Lagonoy Gulf. June 17, 1909. Length 131 mm.

A1078. Maitara Island. November 26, 1909. Length 165 mm.

20296. Malcochin Harbor, Linapacan Island. December 19, 1908. Length 120 mm.

399. Paron Point, Albany Gulf. January 21, 1909. Length 130 mm.

852 and 853. Port Matalvi, Luzon. November 22, 1908. Length 130 to 137 mm.

986, 987, 9429. Port Matalvi. November 23, 1908. Length 124 to 127 mm.

403. Port Galapag. June 3, 1909. Length 84 mm.

215 to 218. Rapurapur Island. June 22, 1909. Length 113 to 123 mm.

1041 to 1044. Sabutan Island. November 8, 1908. Length 94 to 103 mm.

Brown generally. Head usually darker than tail, especially below where often blackish brown or neutral black. Iris dark gray. Inside mouth gray to blackish. Inside gill opening pale below, dark above and branchiostegal region blackish brown. Chest, breast and belly neutral black to blackish. Fins mostly pale, paired ones darker.

South Africa, tropical Indian Ocean, East Indies, Philippines.

8949. Between Paron and Jesus Points, Albany Gulf, Luzon. June 21, 1909. Length 148 mm.

781, 782, 1181 [1537]. Bolinao Island. March 10, 1909. Length 137 to 145 mm.

3925 [1005]. Caxisigan Island, off Balabac. January 2, 1909. Length 144 mm. Like Bleeker's figure except lower part of side and belly almost pure white, back and upper portion more pure lemon yellow than shown. Ocular bands, peduncular bars and lateral blotch jet black. Caudal and pectoral dusky. Ventral cadmium.

249 [1012]. Caxisigan Island. December 29, 1909. Length 75 mm.

A 721. Danawan Island. September 27, 1909. Length 137 mm.

215-86. Guinigan Island. June 4, 1909. Length 122 mm.

U. S. N. M., No. 82670.

1813

Albatross Collection (D. 5587). Sipidan
Island (W.), S. 12° E., 3.8 miles (lat.
4° 10' 35" N., long. 118° 37' 12" E.), Sibuko
Bay, Borneo. In 415 fathoms. September
28, 1909. Length 140 mm.

Albatross Collection (D. 5607). Binang
Unang Island (E.) S. 36° E., 5 miles
(lat. 0° 04' S., long. 121° 36' E.), Gulf of
Tomini, Celebes. In 761 fathoms. November
18, 1909. Length 185 mm.

Albatross Collection (D. 5648). North
Island (S.), N. 87° E., 10.2 miles (lat.
5° 35' S., long. 122° 20' E.), Buton Strait.
In 559 fathoms. December 16, 1909.
Length 253 mm.

Albatross Collection (D. 5651).
Buginkali Point, S. 67° E., 21 miles

uniformly pale brown like body.

469

Zanzibar, Madagascar, Ceylon, East
Indies, Polynesia^{Hawaii}, in young examples
the black blotch on the back is
smaller than in the adults and with
a broad white border.

1814

(lat. $4^{\circ}43'50''S.$, long. $121^{\circ}23'24''E.$), Gulf of Boni, Celebes. In 700 fathoms. December 17, 1909. Length ~~223~~ 223 mm.

Albatross Collection (D. 5664).

Kopoporang Light, N. $66^{\circ}E.$, 3.8 miles (lat. $4^{\circ}43'22''S.$, long. $118^{\circ}53'18''E.$), Macassar Strait, Celebes. In 400 fathoms. December 28, 1909. Length 186 mm.

U. S. N. M., No. 82671. Atulayan Island (F.), S. $63^{\circ}W.$, 4 miles (lat. $13^{\circ}36'48''N.$, long. $123^{\circ}38'24''E.$), east coast of Luzon. In 500 fathoms. June 18, 1909. Albatross Collection (D. 5469). Length 125 to 185 mm. 5 examples.

468

Depth $1\frac{2}{5}$ to $1\frac{1}{2}$; head 3 to $3\frac{1}{3}$, width $1\frac{4}{5}$ to 2. Snout $2\frac{1}{3}$ to 3 in head from snout tip; eye $2\frac{1}{2}$ to $3\frac{1}{2}$, little greater than snout in young to $1\frac{1}{4}$ with age, greater than interorbital in young to $1\frac{1}{4}$ with age; maxillary $\frac{1}{2}$ to $\frac{3}{5}$ in snout, $3\frac{2}{5}$ to $3\frac{3}{4}$ in head; interorbital $2\frac{2}{5}$ to $3\frac{1}{2}$, broadly convex. Gill rakers 5 + 12, short points, $\frac{1}{6}$ of gill filaments, which $1\frac{1}{5}$ in eye.

Scales 36 to 38 between gill opening and caudal base; tubes 32 to 35 in lateral line; 7 to 9 scales above lateral line, 24 or 25 below. Scales with 14 or 15 basal radiating striae; apical denticles 63 to 156, with 3 to 22 transverse series of basal elements; circuli fine.

D. XIII, 22, I or 23, I, last spine $1\frac{2}{5}$ to 2 in total head length, fifth ray $1\frac{2}{5}$ to $1\frac{1}{2}$. A. III, 19, I or 20, I, third spine $1\frac{2}{5}$ to $1\frac{1}{8}$, fifth ray $1\frac{1}{3}$ to $1\frac{2}{3}$; least depth of caudal peduncle 3 to $3\frac{1}{8}$; caudal $1\frac{2}{5}$ to $1\frac{1}{2}$, hind edge slightly convex; pectoral 1 to $1\frac{1}{6}$; ventral 11 to 15.

Light brown generally. Broad black band from pre-dorsal and supra-ocular to eye and below on side of breast meeting its fellow. On back medianly black rounded blotch, larger than eye with age or extends over 8 scales. Posterior borders of soft dorsal and anal black, edges very narrowly white. Fins otherwise all

U. S. N. M., No. 82672.

Albatross Collection (D. 5439). Hermana
Mayor Light, S. 33° E., 12.6 miles
(lat. $15^{\circ} 58' 15''$ N., long. $119^{\circ} 40' 20''$
E.), west coast of Luzon. In
940 fathoms. May 9, 1909. Length
230 mm.

Albatross Collection (D. 5605).
Dodepo Island (W.), N. 14° W.,
5.9 miles (lat. $0^{\circ} 21' 33''$ N., long.
 $121^{\circ} 34' 10''$ E.), Gulf of Tomini,
Celebes. In 647 fathoms. November
16, 1909. Length 223 mm.

Albatross Collection (D. 5567).
Dammi Island (N.), N. 81° W., 9
miles (lat. $5^{\circ} 48''$ N., long. $120^{\circ} 33' 45''$
E.), north of Tawi Tawi. In 268
fathoms. September 21, 1909.
Length 198? to 205 mm. 3 examples.

6907. Santo Domingo, Batan.
November 7, 1908. Length 145 mm.

A 752. Yapadan Island. September 28,
1909. Length 153 mm.

A 513, 19231. Tapanantana Island.
September 13, 1909. Length 95 to 152 mm.

9649. Tomah Island. December 11, 1909.
Length 48 mm.

6990. West coast of Sabtan Island. November 9, 1908.
Length 129 mm. Side below silvery.
Back and dorsal sulphur yellow.
Dorsal and caudal bars black, also
lateral blotch. No lateral stripe apparent
over pectoral. Caudal base white, fin
almost hyaline. Anal and ventral
bright cadmium.

U. S. N. M., No. 82673.

Albatross Collection (D. 5469).

Atulayan Island (F.), S. 63° W., 4 miles (lat. $13^{\circ}36'48''$ N., long. $123^{\circ}38'24''$ E.), east coast of Luzon. In 500 fathoms. June 18, 1909. Length 210 mm.

Albatross Collection (D. 5605).

Dodepo Island (W.) N. 14° W., 5.9 miles (lat. $0^{\circ}21'33''$ N., long. $121^{\circ}34'10''$ E.), Gulf of Tomini, Celebes. In 647 fathoms. November 16, 1909. Length 213 mm.

Albatross Collection (D. 5607).

Binang Unang Island (F.) S. 36° E., 5 miles (lat. $0^{\circ}4'$ S., long. $121^{\circ}36'$ E.), Gulf of Tomini, Celebes. In 761 fathoms. November 18, 1909. Length 228 mm.

Albatross Collection (D. 5654).

Cape Tabako, N. 17° E., 21.5 miles

58533 U. S. N. M. Honolulu. E. L. Berndt.
Length 114 mm.

(lat. $3^{\circ}42'S.$, long. $120^{\circ}45'50''E.$),
Gulf of Tomini, Celebes. In 805
fathoms. December 18, 1909.

Length 234 mm.

Albatross Collection (D. 5587).

Sipidan Island (W.) S. $12^{\circ}E.$,
3.8 miles (lat. $4^{\circ}10'35''N.$, long.
 $118^{\circ}37'12''E.$), Sibuko Bay,
Borneo. In 415 fathoms. September
28, 1909. Length 185 mm.

U. S. N. M., No. 82694.

Albatross Collection (D. 5467).

Atulayan Island (S.), S. $79^{\circ}W.$,
2.5 miles (lat. $13^{\circ}35'27''N.$, long.
 $123^{\circ}37'18''E.$), east coast of
Luzon. In 480 fathoms. June 18,
1909. Length 148 to 170 mm. 2 examples.

Albatross Collection (D. 5648).

North Island (S.), N. $87^{\circ}E.$, 10.2
miles (lat. $5^{\circ}35'S.$, long. $122^{\circ}20'E.$),

475

Chaetodon melanopoma Playfair.

Chaetodon melanopoma Playfair, Fishes of
Zanzibar, 1865, p. 35, plate 6, fig. 2. Aden.

Snout slightly produced, little longer
than eye. Preopercle very indistinctly serrated.
Scales 25 in lateral line. D. XII, 25; A.
III, 21; soft vertical fins rounded. Yellow,
with darker lines nearly vertical and
following series of scales. Ocular band dark
blotch, extending in breadth nearly to
opercle angle and in length to end of
subopercle. Soft vertical fins with light
margins and black submarginal lines.
(Playfair.)

Buton Strait. In 559 fathoms.
December 16, 1909. Length 212 mm.

Albatross Collection (D. 5650).

Lamulu Point, N. 5° W., 12.5 miles (lat. $4^{\circ}53'45''$ S., long. $121^{\circ}29'$ E.), Gulf of Boni, Celebes.

In 540 fathoms. December 17, 1909. Length 230 to 243 mm. 2 examples.

Albatross Collection (D. 5657).

Olang Point, N. 61° W., 15.5 miles (lat. $3^{\circ}19'40''$ S., long. $120^{\circ}36'30''$ E.),

Gulf of Boni, Celebes. In 492 fathoms. December 19, 1909. Length 120 mm.

Albatross Collection (D. 5658).

Cape Loko Loko, S. 31° W., 12 miles (lat. $3^{\circ}32'40''$ S., long. $120^{\circ}31'30''$ E.),

Gulf of Boni, Celebes. In 510 fathoms. December 19, 1909. Length 165 mm.

476

Chaetodon kleinii Bloch.

Chaetodon kleinii Bloch, Naturges. Insel. Fäch.,
band 4, 1790, p. 7, plate 218, fig. 2. East Indies.
— Walbaum, Arted. Pisc., vol. 3, 1792, p. 422
(on Bloch). — Forster, Faun. Indica, 1795, p.
15. — Schneider, Syst. Ichth. Bloch, 1801, p.
225 (East Indies). — Lacépède, Hist. nat.
Pois., vol. 4, 1802, pp. 461, 495 (Indies).

Chaetodon kleinii Cuvier, Hist. nat. Poiss., vol.
7, 1831, p. 38 (copied). — Günther, Cat. Fish.
Brit. Mus., vol. 2, 1860, p. 22 (Ambonia,
Java, type of Chaetodon flavescens). —
Playfair, Fishes of Zanzibar, 1866, p. 33
(Zanzibar). — Capello, Journ. Soc. Lisbon, 1871,
p. 199 (Mozambique). — Günther, Cruise of
Curacoa, Brenchley, 1873, p. 410 (Misol,
Moluccas). — Day, Fishes of India, pt. 1,
1875, p. 106. — Peters, Monatsb. Akad. Wiss.
Berlin, 1876, p. 437 (Hawaii). — Von

Lionurus richardi (Weber)

1819

- . Macurus richardi Weber, Siboga
Exped., vol. 57, p. 154, pl. 1, figs. 3-3a,
1913 (type locality: Macassar Strait;
Celebes Sea; Ceram Sea; Flores Sea;
538 to 1260 meters).

Lionurus richardi Gilbert and Hubbs,
Bull. U. S. Nat. Mus., no. 100, vol. 1,
p. 559, 1920 (copied). — Weber and

Beaufort, Fishes Indo Austral. Archip.,
vol. 5, p. 76, fig. 16, 1929 (types).

1820

Lionurus smiliophorus (Vaillant)

Macrurus smiliophorus Vaillant,
Expéd. Sci. Travailleur et Talisman,
Pois., p. 242, pl. 22, fig. 1, a-d, 1888
(type locality: Gulf of Gascony; off
Morocco; Houdan; Cape Verde Islands;
460 to 1319 meters). — Goode and Bean,

Oceanic Ichth., p. 392, 1895 (note).

Lionurus smiliophorus Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146, 1916
(name).

Depth $6\frac{1}{2}$; head 6, width 2. Snout
 $3\frac{1}{3}$ in head, $1\frac{1}{5}$ in eye; eye 3 in
head; preoral length $4\frac{1}{8}$; maxillary
reaches $\frac{2}{5}$ in eye, length from
front end $2\frac{7}{8}$ in head; mandibular
barbel $1\frac{7}{8}$ in eye; teeth in villiform
bands in jaws, of 4 or 5 irregular
rows; interorbital $5\frac{1}{5}$ in head,
 $1\frac{2}{3}$ in eye, low, depressed concavely.
Gill rakers 0 + 8 low spinescent

tubercles on second arch, $\frac{1}{2}$ of gill filaments, which $4\frac{1}{5}$ in eye.

Scales 150 in lateral line; 9 above, 14 below, 44 predorsal of which 18 forward opposite hind eye edge. Scales with 14 to 16 converging to parallel apical rows of spinules, last sagittate and extend well over hind edge of scale; circuli five, obsolete apically.

D. II, 10-138, second simple ray slender, pungent, front edge with row of antrorse spinules, length $1\frac{1}{8}$ in head; interdorsal space $1\frac{2}{5}$; A. 136, fin height $2\frac{2}{3}$ in head; pectoral rays I, 17, fin length $1\frac{3}{5}$ in head; ventral rays I, 8, fin $1\frac{9}{10}$, first ray ending in filament.

German East Africa, Tikiindani, New
 Britain, types of Chaetodon melastomus.
 — McCulloch and Whitley, Mem. Queensland
 Mus., vol. 8, pt. 2, July 7, 1925 (Murray
 Island).

Tetragonopterus bleini Bleeker, Ned. Tijds.
 Dierk., vol. 4, 1874, p. 117 (China).

Tetragonopterus (Lepidochaetodon) bleini
Bleeker, Atlas Ichth. Ind. Néerl., vol.
 9, 1877, p. 45, plate (11) 393, fig. 3 (Celebes,
 Sangi, Flores, Solos, Timor, Halmahera,
 Ternate, Batjan, Buru, Ceram, Ambonia,
 Goram, Banda, New Guinea).

Chaetodon (Tetragonopterus) bleinii Lauvage,
 Hist. Nat. Madagascar, Poiss., 1891, p. 258.

Chaetodon melastomus Schneider, Syst.
 Ichth. Bloch, 1801, p. 224. Tranquebar.

Chaetodon melanomystax Schneider, l.c.,
 p. 224.

1822

Largely uniform brown. Iris grayish. Inside mouth pale. Inside gill opening dark or blackish brown above, pale to whitish below. Under surface of head, branchiostegal region, breast, chest and belly neutral black to blackish brown. Fins all brownish, first dorsal darker terminally and paired ones blackish brown basally.

Eastern Atlantic.

U. S. N. M., No. 42098.

Paris Museum (86 + 149).

Length 243 mm.

Martens, Preuss. Exped. Ost Asien, 1876,
 p. 388 (Amboina). — Reyer, Ann. Soc.
 Espan. Hist. Nat. Madrid, vol. 14, 1885,
 p. 17 (Celebes and Sangi). — Day, Fauna
 British India, vol. 2, 1889, p. 6. — Elera,
 Cat. Faun. Filip., vol. 1, 1895, p. 486 (Luzon,
 Manila). — Steindachner, Abhandl.
 Senckenberg. Gesell., band 25, 1900, p. 420
 (Ternate). — Jordan and Seale, Bull. Bur.
 Fisher., vol. 26, 1906 (1907), p. 34 (Manila).
 — Jordan and Richardson, Bull. Bur.
 Fisher., vol. 27, 1907 (1908), p. 269 (Cagayanillo).
 — Regan, Ann. Durban Mus., vol. 1, 1908, p.
 169 (Natal). — Beaufort, Bijdr. Dierk.
 Amsterdam, deel 19, 1913, p. 124 (Amboina).
 — Weber, Siboga Exped., band 65, 1913, p. 305
 (Karakelang, Binungka, Nusa Laut, Banda,
 Lir, Postillion Islands). — Ahl, Arch.
 Naturges., band 89, abth. A, heft 5, 1923, p.
 144 (type, Ralumb, Amboina, Mozambique).

1823

Lionurus spinosus Gilbert and Hubbs

Lionurus spinosus Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. (146)
199, pl. 10, fig. 2, 1916 (type locality:
Eastern Sea, 427 fathoms); Bull. U.
S. Nat. Mus., no. 100, vol. 1, p. 554,
1920 (off east Luzon, 300 to 560 fathoms).

Depth 7; head $5\frac{3}{4}$, width $1\frac{7}{8}$. Snout
 $3\frac{1}{5}$ in head; eye 4, $1\frac{1}{5}$ in snout,
little greater than interorbital;
maxillary reaches opposite eye
center, length from front end
 $3\frac{2}{5}$ in head; mandibular barbel
 $1\frac{2}{3}$ in eye; teeth fine, simple, conic,
in bands in jaws, of 7 or 8
irregular rows with outer upper
row enlarged; interorbital $4\frac{1}{6}$ in
head, low, slightly convex. Gill
rakers 2+7 low knobs on second
arch, $\frac{1}{3}$ of gill filaments, which $2\frac{1}{2}$
in eye.

Scales 157 of which 7 forward
of vent; 10 above, 24 below, 42

predorsal. Scales all finely
spinescent, finely rough to touch,
adherent, rougher on muzzle.
Scales on posterior part of head
equally large as on body. Scales
without striae; apically area of
6 to 8 irregular rows of slender
and rather long denticles; circuli
moderate.

D. II, 10 - 14 $\frac{2}{3}$, second simple ray
purgent, front edge denticulated,
spinules small and few, length $4\frac{2}{3}$
in total fish; A. 155, much higher
than low second dorsal; pectoral
rays I, 20, fin 2 in head; ventral
I, 7, fin 2, first ray ending in
short filament.

Brown. Iris pale. Under
surface of head posteriorly,
branchiostegals, breast and belly

479

Chaetodon virescens Cuvier, Hist. Nat.
Poiss., vol. 7, 1831, p. 23³⁰. Junior; Mauritius.
— Gichenot, Notes I. Reunion, vol. 2,
1862, p. 25.

Chaetodon flavescens Bennett, Proc. Zool.
Soc. London, vol. 1, 1831, p. 61. Mauritius.

chocolate to neutral blackish.

Inside mouth dark gray and gill opening blackish. Fins brown, ventrals darker or dusky.

Philippines, Japan. Seems to differ from Lionurus proximus (Smith and Radcliffe) in the longer outer ~~an~~ upper or premaxillary teeth, naked lower surface of head, longer spinules on scales and longer dorsal spine.

U. S. N. M., No. 76868.

In 447 fathoms.

Albatross Collection (D. 4915). Length 275 mm. Type.

481

spines down to include pectoral base,
also to ventral base. ~~Another~~ diffuse
pale brown, ~~fish-like~~ area from
middle of back down to post-ventral
region. ~~Obscure diffuse pale area on~~
~~tail posteriorly.~~ One example with
spinous dorsal dusky terminally or
marginally. Soft dorsal and anal each
narrowly edged whitish with very
narrow dusky to blackish submarginal
line. Caudal pale, with broad grey to
raw-brown posterior border. Pectoral
pale brown. Ventral blackish, anal
pale brown.

Gambian, Mozambique, Mauritius, Re-
union, India, East Indies, China, Queensland,
Micronesia. One example (969) has the
caudal rudimentary, evidently atrophied
from an injury.
Melanesia.

1826

Genus Mataeocephalus Berg

Mataeocephalus Berg, Commun. Mus.
Buenos Aires, vol. 10, p. 43, 1879. (Type
Coelocephalus acipenserinus Gilbert
virtually. Mataeocephalus Berg ^{and Cramer.} proposed
to replace Coelocephalus Gilbert and
Cramer.)

Coelocephalus (not Agassiz) Gilbert and
Cramer, Proc. U. S. Nat. Mus., vol. 19, p.
422, 1896. (Type Coelocephalus
acipenserinus Gilbert and Cramer, orthotypic.)

Body and tail slender, compressed.
Head depressed, upper profile nearly
straight. Snout projects, with distinct
angulation produced by ridge extended
downwards before nostrils and ending
in bony prominence or cluster of
spines on lateral edge of snout.
dividing an anterior marginal portion,
converging with that of other side into
snout tip, which usually formed
by spinigerous bifid tubercle;

Posterior portion strengthened by suborbital ridge, which extends below hind edge of orbit and divides cheek into upper, somewhat sloping and lower nearly horizontal part. No spinous occipital ridges. Head below usually naked, also nasal area. Mouth small, entirely inferior, upper jaw less than $\frac{1}{3}$ of head. Gill membranes unite below preopercle ridge. Branchiostegals 6 or 7. Scales imbricate, spinules arranged in parallel or nearly parallel rows. Second simple dorsal ray pungent, usually sharply serrated. Pectoral below and somewhat before first dorsal origin. Ventral below pectoral, outer filamentous ray prolonged and no naked pit between fin bases. Vent close before front of anal.

Tropical deep seas.

1828

Mataeocephalus acipenserinus (Gilbert
and Cramer)

Coelocephalus acipenserinus Gilbert
and Cramer, Proc. U. S. Nat. Mus., vol.
19, p. 422, pl. 42, fig. 1, 1897 (type
locality: Hawaiian Islands, 298 to
375 fathoms).

Coelorrhynchus acipenserinus Garman,
Mem. Mus. Comp. Zool., vol. 24, p. 397,
1899 (reference).

Macrurus (malacocephalus) acipenserinus
Brauer, Deutsch. Tiefsee Exped. Valdivia,
vol. 15, p. 391, 1906 (reference).

Mataeocephalus acipenserinus Gilbert,
Bull. U. S. Fish Comm., vol. 23, pt. 2, p.
676, 1903 (1905) (off Molokai, Oahu;
Bird Island; Kauai; Maui; Pailolo
Channel; 222 to 498 fathoms). — Gilbert
and Hubbs, Proc. U. S. Nat. Mus., vol.
51, p. 146, 1916 (reference). — Fowler,
Mem. Bishop Mus., vol. 10, p. 87, 1928
(Hawaiian Islands; types).

1829

Depth $7\frac{4}{5}$ to $8\frac{3}{5}$; head $3\frac{9}{10}$ to $4\frac{2}{5}$, width $2\frac{1}{10}$ to $2\frac{3}{5}$. Snout to eye $2\frac{1}{3}$ to $2\frac{3}{5}$ in head; eye $3\frac{4}{5}$ to $4\frac{1}{10}$, $1\frac{2}{5}$ to $1\frac{3}{4}$ in snout; orbit 3 to $3\frac{1}{8}$ in head, 1 to $1\frac{1}{5}$ in snout; preoral length $2\frac{1}{3}$ to $2\frac{1}{2}$ in head; mandibular barbel 4 in eye; teeth uniform, finely villiform in jaws, in rather narrow bands; interorbital $4\frac{2}{5}$ to $4\frac{1}{2}$ in head, $1\frac{1}{3}$ to $1\frac{2}{5}$ in orbit, low, broadly concave. Gill rakers 0+6 low spinescent tubercles on second arch, $\frac{1}{3}$ of gill filaments, which $3\frac{1}{4}$ in orbit.

Scales (pockets) 90 in lateral line; 7 above, 16? below, 12 predorsal forward till opposite hind eye edge. Scales with 5 to 7 parallel apical rows of long

10423. East of Verde Island. July 22, 1908. Length 92 mm.

487, 1212 to 1217. Galera Bay. June 9, 1908. Length 91 to 112 mm.

9642. Gomomo Island. December 3, 1909. Length 84 mm.

516 to 518. Gubat Bay, Luzon. June 23, 1909. Length 86 to 96 mm.

22938. Inamuran Bay, Mindanao.

August 9, 1909. Length 100 mm. ^{2027 and 2028. Jolo Island. 2205 16, 1908. Length 67 to 78 mm. (D. 5147.)}
430, 801, 802, 955, 960, Langa Point, Luzon.

June 24, 1909. Length 77 to 98 mm.

1105 to 1110, 4878, 4884, 4885. Little Santa Cruz Island. May 28, 1908. Length 104 to 120 mm.

645. Lode Bay, Negros. March 13, 1909. Length 100 mm.

9878, 9879, 21447. Maitara Island. November 26, 1909. Length 57 to 115 mm.

953 and 954. Malinipa Island. September 8, 1909. Length 113 to 117 mm.

slender spinules, last extending well behind scale edge; circuli moderate, complete.

D. II, 10 or II, 11 — 75, second simple ray pungent, slender, with row of antrorse spinules along front edge, length $1\frac{4}{5}$ in head; interdorsal space $3\frac{3}{5}$; A. 98, fin height 6?; pectoral rays I, 21 or I, 22, fin $1\frac{7}{8}$ to $2\frac{1}{8}$ in head; ventral rays I, 7 or I, 8, fin $1\frac{3}{4}$ to $2\frac{2}{5}$, first ray ending in filament.

Light brown, head paler above and forward, especially muzzle. Under surface of head pale to whitish, only faint gray tints on mandible below, branchiostegal region and opercles. Isthmus pale, breast

482

^{623 and}
9680. Bagacay Bay, Escarpada Island.
March 13, 1909. Length $97\frac{1}{2}$ ^{to 113} mm.

502. Biri Channel. June 2, 1909. Length
105 mm.

756. Buang, Talijit Island. March 15,
1909. Length 110 mm.

621. Bugruk Island. January 5, 1909.
Length 78 mm.

265. Cagayan Island. March 31, 1909.
Length 110 mm.

1238 and 1239. Candaraman Island. January
4, 1909. Length 79 to 80 mm.

12261. Caxisigan Island. January 2, 1909.
Length 76 mm.

942. Cebu market. April 5, 1908. Length 102 mm.

¹⁰⁰⁷¹
967 and 9677. Danawan and Villamil
Islands. September 27, 1909. Length 65 to 97 mm.

452 and 468. Doc Can Island. January 7
1910. Length 105 to 115 mm.

coppery and belly behind ¹⁸³¹
and above ventral to pectoral
bases violaceous black or
neutral gray. Iris gray. Inside
gill opening forward and
below white, above blackish.
Fins pale or lighter than tail,
except ventrals, which with
broad blackish bases.

Hawaiian Islands.

Depth $1\frac{2}{5}$ to $1\frac{3}{5}$; head 3 to $3\frac{1}{2}$, width $1\frac{4}{5}$ to 2. Snout $2\frac{3}{4}$ to $2\frac{4}{5}$ in head; eye $2\frac{3}{4}$ to 3, slightly greater than snout in young to $1\frac{1}{4}$ with age, greater than interorbital in young to equal with age; maxillae $\frac{3}{5}$ to $\frac{3}{4}$ in snout $3\frac{3}{4}$ to $3\frac{1}{2}$ in head; interorbital $3\frac{1}{10}$ to $3\frac{1}{5}$, convex. Gill rakers 5 + 13, short points, about $\frac{1}{8}$ of gill filaments, which $1\frac{1}{2}$ in length.

Scales 30 or 31 between gill-opening and caudal base; tubes $3\frac{1}{2}$ to 3 + in lateral line; 7 or 8 scales above lateral line, 14 or 15 below. Scales with 14 or 15 basal radiating striae, also 1 to 3 auxiliaries; apical denticles 70 to 160, with 3 to 5 series of basal elements transverse; circuli five.

D. XIII, I, 23, I, last spine $1\frac{1}{4}$ to $1\frac{1}{3}$ in head, eighth ray $1\frac{1}{5}$ to $1\frac{1}{4}$; A. III, I, I, or 18, I, third spine $1\frac{1}{5}$ to $1\frac{4}{5}$, eighth ray $1\frac{2}{5}$ to $1\frac{1}{2}$; least depth of caudal peduncle $2\frac{1}{8}$ to $3\frac{1}{8}$; caudal $1\frac{2}{3}$ to $1\frac{4}{5}$, hind edge slightly convex; pectoral $1\frac{1}{8}$ to $1\frac{1}{10}$; ventral 1 to $1\frac{1}{4}$.

Generally pale brown, lighter or paler below. Large predorsal bluish-brown band, meeting its fellow extends down to eye, over cheek and side of breast where it also joins its fellow, though with much less than eye-triangle. Lips and end of muzzle dusky. Diffuse pale band extends from front to anal

U. S. N. M., No. 47707. Lat. $21^{\circ}09'$
N., long. $157^{\circ}53'W.$, Hawaiian
Islands. In 298 fathoms. December 6,
1891. Albatross Collection (D. 3476).
Length 133 mm.

U. S. N. M., No. 47721. Lat. $21^{\circ}12'$
N., long. $157^{\circ}38'30''W.$, Hawaiian
Islands. In 375 fathoms. December 6,
1891. Albatross Collection (D. 3474).
Length 125 to 188 mm. 4 examples,
largest type, others paratypes.

U. S. N. M., No. 47722. Lat. $21^{\circ}10'$
 $30''N.$, long. $157^{\circ}48'30''$, Hawaiian
Islands. In 337 fathoms. December 4,
1891. Albatross Collection (D. 3471).
Length 177 mm.

U. S. N. M., No. 47728. Lat. $21^{\circ}08'N.$,
long. $157^{\circ}43'W.$, Hawaiian Islands. In
351 fathoms. December 6, 1891. Albatross
Collection (D. 3475). Length 118 to 178
mm. 7 examples.

484

9054. Maricaban Island. January 20, 1908. Length 97 mm.

606, 607, 613, 1227. Murcielago Bay. August 4, 1909. Length 77 to 93 mm.

389. Near Palay Bay, Luzon. June 16, 1909. Length 71 mm.

4758, 4759, 10406 to 10408. North west of Verde Island. July 22, 1908. Length 75 to 113 mm.

4745, 21016, 21017. Pilon Point, Albany Gulf, Luzon. June 21, 1909. Length 89 to 102 mm.

4743. Pilon Island. September 12, 1909. Length 89 mm.

703 to 706, 887. Port Galera. June 9, 1908. Length 58 to 120 mm.

9977 and 9648. Port Galera, Mindoro. October 27, 1909. Length 102 to 112 mm.

969, 10299, 10477, 10493, 11024, 22740. Port Maricaban. July 21, 1908. Length 56 to 113 mm.

721. Port Palapay. June 3, 1909. Length 83 mm.

U. S. N. M., No. 47731. Lat. $21^{\circ}15'$
N., long. $157^{\circ}30'$ W., Hawaiian Islands.
In 313 fathoms. December 6, 1891.
Albatross Collection (D. 3473).
Length 1.68 mm.

U. S. N. M., No. 55259. Hawaiian
Islands. Albatross Station (not
given). Length $13\frac{1}{2}$ to $17\frac{1}{2}$ mm. 10
examples.

57001 U. S. N. M. Upia, Yarnow.
Bureau of Fisheries. Length 110 to 120 mm.
2 examples.

61702 U. S. N. M. Mauritius. Colonel
Nicholas Pike. Length 88 to 160 mm.
19 examples.

65793 U. S. N. M. Masemo, Tannier.
Albatross Collection (A. 76, A. 85, A. 101).
Length 132 to 190 mm. 3 examples.

65794 U. S. N. M. Tari Tari, Gilbert
Islands. Albatross Collection. Length
178 mm.

65795 U. S. N. M. M. Kusaie, Caroline.
Albatross Collection. In poor preservation.
Length 63 mm.

71514 U. S. N. M. Tanegashima, Japan.
Albatross Collection 1906. Length 27 to 40
mm. 2 examples.

71751 U. S. N. M. Kafa, Okinawa. Albatross
Collection 1906. Length 72 to 178 mm. 4 examples.

1834

Mataeocephalus adustus Smith and Radcliffe

Mataeocephalus adustus Smith and Radcliffe,
Proc. U. S. Nat. Mus., vol. 43, p. 126, pl.
28, fig. 3, 1912 (type locality: Gulf of
Boni, Celebes, 805 fathoms). —

Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
~~No. 100, vol. 1, p. 563, 1920~~ vol. 51, p. 146,
1916 (reference); Bull. U. S. Nat. Mus.,
No. 100, vol. 1, p. 563, 1920 (Gulf of
Tmini; south Patiente Strait; Gulf
of Boni, Celebes, 569 to 834 fathoms).
— Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 5, p. 81, 1929
(compiled).

1235

Mataeocephalus microstomus (Regan)

Macrurus microstomus Regan, Trans.
Linn. Soc. London, vol. 12, pt. 3, Zool.,
p. 221, 1905 (type locality: Saya de
Malha Bank, 300 to 500 fathoms).

{ Macrurus (Mataeocephalus) microstomus
Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 5, p. 80, 1929
(note).

Mataeocephalus microstomus Gilbert
and Hubbs, Proc. U. S. Nat. Mus., vol.
51, p. 146, 1916 (reference).

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1836

Mataeocephalus nigrescens Smith and
Radcliffe

Mataeocephalus nigrescens Smith and
Radcliffe, Proc. U. S. Nat. Mus., vol.
43, p. 125, pl. 28, fig. 2, 1912 (type
locality: between Leyte and Mindanao,
735 fathoms). — Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146,
1916 (reference); Bull. U. S. Nat. Mus.,
no. 100, vol. 1, p. 563, 1920 (between
Marinduque and Luzon; Palawan
Passage; Jolo; between Leyte and
Mindanao; north Mindanao; Sibuko
Bay, Borneo; 340 to 735 fathoms). —

Weber and Beaufort, Fishes Indo
Austral. Archip., vol. 5, p. 80, 1929
(compiled).

1837.

Mataeocephalus tenuicauda (Garman)

Macrurus tenuicauda Garman, Mem.
Mus. Comp. Zool., vol. 24, p. 216, pl. 49,
fig. 1, 1899 (type locality: lat. $7^{\circ}31'30''$
N., long. $79^{\circ}14'W.$, Gulf of Panama, 458
fathoms).

Macrurus (Macrurus) tenuicauda Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol.
15, p. 389, 1906 (reference).

Coelorhynchus tenuicauda Garman, Mem.
Mus. Comp. Zool., vol. 24, p. 397, 1899
(reference).

Mataeocephalus tenuicauda Gilbert and
Hubbs, Proc. U. S. Nat. Mus., vol. 51, p.
146, 1916 (reference).

1838

Genus Trachonurus Günther

Trachonurus Günther, Rep. Voy.
Challenger, vol. 22, ppi. 124, 142.
(Type Coryphaenoides villosus
Günther, monotypic.)

Body greatly elongate, strongly compressed, tail very long, slender and tapering. Head short, compressed, laterally vertical, without prominent ridges. Snout obtuse, short, tip high and nearly above front border of mouth. Mouth rather small. Barbel moderate. Teeth in jaws in moderate villiform bands, front premaxillary ones somewhat enlarged or in outer series of both jaws enlarged. Bones of head firm, suborbital ridge little developed. Gill membranes broadly united below preopercle ridge. Gill rakers tubercular. Branchiostegals 7. Scales small, adherent, diamond

shaped, densely covered with sharp erect pointed spinules, strongest on enlarged scales along front portion of dorsal and anal base. Naked area behind pectorals, space between ventrals and anus also scaleless. Lateral line nearly straight, or anteriorly with low & curve convexly. Sensory canal system moderately developed. Second simple dorsal ray pungent, slender, smooth. Second dorsal fin very low. Ventrals inserted below first dorsal, origin conspicuously behind pectoral origin, first ray filamentous. Vent remote before anal fin.

Two species in tropical and subtropical seas.

1840

Trachonurus sentipellis Gilbert and Cramer

Trachonurus sentipellis Gilbert and Cramer,
Proc. U. S. Nat. Mus., vol. 19, p. 429, pl.
45, fig. 1, 1897 (type locality: Hawaiian
Islands, 375 fathoms). — Garman,
Mem. Mus. Comp. Zool., vol. 24, p. 395,
1899 (reference). — Gilbert, Bull. U. S.

Fish Comm., vol. 23, pt. 2, p. 679, 1903
(1905) (off Kauai; Kaiwi Channel; 418
to 804 fathoms). — Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146,
1916 (reference). — Fowler, Mem. Bishop
Mus., vol. 10, p. 87, 1928 (Hawaiian
Islands).

Macurus (Trachonurus) sentipellis
Brauer, Deutsch. Tiefsee Exped.
Valdivia, vol. 15, p. 391, 1906
(reference).

1841

Depth $5\frac{4}{5}$ to 8; head 5 to $5\frac{1}{4}$, width 2 to $2\frac{1}{8}$. Snout $3\frac{4}{5}$ to 4 in head, 1 to $1\frac{1}{5}$ in eye; eye $3\frac{1}{6}$ to $3\frac{4}{5}$ in head, 1 to $1\frac{1}{6}$ in interorbital; maxillary reaches $\frac{2}{5}$ to $\frac{1}{2}$ in eye, length from front end 3 to $3\frac{1}{8}$ in head; preoral length $5\frac{1}{2}$ to $5\frac{2}{3}$; mandibular barbel slender, $8\frac{1}{4}$ to 9; teeth in villiform bands, of 5 irregular rows above and 4 below, also outer row of upper anterior teeth little enlarged; interorbital $3\frac{1}{5}$ to $3\frac{3}{5}$ in head, 1 to $1\frac{1}{5}$ in eye, low, nearly level or with several slight depressions. Gill rakers 2 + 11 short spinescent knobs on second arch, $\frac{1}{3}$ of gill filaments, which $2\frac{1}{5}$ in eye.

Scales 138? in lateral line, of which 15 before vent; 7 above,

2 examples. Varadero Harbor.
July 22, 1908. Length 19 to 21 mm.

4685. Apra Bay, Guam. November
19-20, 1907. Length 70 mm.
10 examples. Salisi Island, Dutch East Indies. November 8,
1909. Length 20 to 24 mm.
19236 U.S.N.M. Fanning Islands.

Dr. J. H. Streets. Length 170 to 178 mm.
2 examples.

26831 U.S.N.M. Johnston Island.
Length 190 mm.

42344 U.S.N.M. Apia, Samoa.
Bureau of Fisheries. Length 118 to 162 mm.
6 examples.

55101 U.S.N.M. Honolulu, Hawaii.
Albatross Collection
~~Bureau of Fisheries~~ 1906. Length 112 mm.

55348 U.S.N.M. Honolulu. Albatross
Collection #40. Length 118 mm.

55958 U.S.N.M. Bacon, Philippines.
Bureau of Fisheries. Length 117 mm. [3694.]

17 below, 38 predorsal. Scales adherent, all spinescent or rough velvety to touch, little larger on posterior sides of head than on body though small and irregularly defined on muzzle. Scales with about 10 or more spinules, often well over scale apically; circuli moderate.

D. II, 7 — 114? (tail broken off), second simple ray terminally filamentous and $1\frac{3}{5}$ to $1\frac{2}{3}$ in head; interdorsal space $3\frac{4}{5}$ to $6\frac{2}{3}$; A. 103? (to end of broken tail), fin much higher than low second dorsal; pectoral rays I, 15 or I, 16, fin 2 to $2\frac{3}{4}$ in head; ventral I, 6, fin $2\frac{4}{5}$ to 3 in head.

503

hyaline. Anal spines and edge of soft fin orange, black bar showing only on posterior portion. Caudal fin hyaline.

3 examples. Sacol Island. September 8, 1909. Length 21 to 225 mm.

668. Tagonak Island. January 7, 1909. Length 138 mm.

10 examples. Talissi Island. November 8, 1909. Length 22 to 24 mm.

378. Tara Island. December 14, 1908. Length 125 mm.

588. Tara Island. December 15, 1908. Length 116 mm.

1004. Tataan, Simalur Island. February 20, 1908. Length 103 mm.

10372. Piliq Bay, Libang Island. July 15, 1908. Length 133 mm.

510. Uligan Bay, near Rita Island. December 29, 1908. Length 152 mm.

heavily uniform brown. Iris dark gray. Under surface of head, breast and belly neutral blackish. Inside mouth and gill opening blackish. Fins brownish.

Hawaiian Islands. Appears to differ from Trachonurus villosus in its little more deeper body, larger eye and mouth, longer barbel, fin rays and scales.

1021. Port Natalvi. November 22, 1908.
Length 118 mm.

935. Tuzada Bay. May 15, 1908. Length
141 mm.

1148 [758], 1149 [770]. Sablayan, Mindoro.
December 13, 1908. Length 38 to 39 mm.

8215. Refugio Island, Palawan, Ragay Island. March 9, 1909.
1045, 1046. Sabatan Island. November
8, 1908. Length 117 mm.

Length 190 mm.

General color like adult, lower series of
black lines indistinct. Black vertical
band from near tip of last dorsal spine
to middle of anal, behind cadmium
orange. Caudal peduncle orange slightly
dusky behind. Dorsal spines posteriorly
tipped with black, which continues as
narrow black bar across soft fin,
ending near middle of vertical edge;
midway in soft fin this expands
about width of ocular band in
lens-shaped enlargement; fin edge

1844
U. S. N. M., No. 51689. Lat. $21^{\circ}12'N.$,
Long. $157^{\circ}38'30''W.$, Hawaiian Islands.
In 375 fathoms. December 6, 1891.
Albatross Collection (D. 3474).

Length 310 mm. Type.

U. S. N. M., No. 55257.

Albatross Station (not given). Length
80 to 175 mm. 6 examples.

340, 341, 812 to 814. Makesi Island.
April 5, 1909. Length 77 to 131 mm.

6237, 6273. Medis Island, Galera Bay,
Mindoro. June 9, 1908. Length 170 to 175 mm.

820. Mompoy Island, Amabuyan Islands.
March 3, 1909. Length 160 mm.

3596, 8215. Pagapas Bay, Luzon. February
20, 1909. Length 150 to 190 mm.

1211. Port Banalacan. February 23, 1909.
Length 161 mm.

4644. Port Binanga, Subig Bay. January
8, 1908. Length 148 mm.

1174, 1175. Port Binanga. January 9, 1908.
Length 57 to 92 mm.

504. Port Ciego, Balabac. January 3, 1909.
Length 127 mm.

10388. Port Janelo, Luzon. July 13, 1908.
Length 155 mm.

967, 10337. Port Maricaban. July 21, 1908.
Length 115 to 164 mm.

1845

Trachonurus villosus (Günther)

Coryphaenoides villosus Günther,
Ann. Mag. Nat. Hist., ser. 4, vol. 20,
p. 441, 1877 (type locality: south of
Yeddo, Japan).

Macrurus villosus Günther, Rep. Voy.
Challenger, vol. 22, p. 142, pl. 36, fig.
B, 1887 (south of Yeddo, 345 fathoms;
Philippines, 500 fathoms). — Goode
and Bean, Oceanic Ichth., p. 409,
1895 (name).

Macrurus (Trachonurus) villosus
Brauer, Deutsch. Tiefsee Exped.
Valdivia, vol. 15, p. 268 (391), 1906
(north west of Sumatra, 1024 meters).

Trachonurus villosus Garman, Mem.
Mus. Comp. Zool., vol. 24, p. 395, 1899
(reference). — Jordan and Snyder,
Annot. Zool. Japon., vol. 3, p. 120,
1901 (reference). — Jordan and Richardson,
Philippine Journ. Sci., p. 58, 1910

1846

(reference). — Jordan, Tanaka, Snyder,
Journ. College Sci. Tokyo, vol. 33, p.
420, 1913 (compiled). — Weber, Siboga
Exped., vol. 57, p. 165, 1913 (Ceram Sea;
Timor Sea; 567 to 924 meters). —

Gilbert and Hubbs, Proc. U. S. Nat. Mus.,
vol. 51, p. 146, 1917 (reference), p. 205
(east coast of Hondo); Bull. U. S. Nat.
Mus., no. 100, vol. 1, p. 564, 1920 (east
Mindoro; Palawan Passage; Marinduque;
Dupon Bay, Leyte; between Cebu-Leyte;
Jolo Sea; between Leyte-Mindanao;
North Mindanao; between Siquijor-
Bohol; between Cebu-Siquijor; Sibuko
Bay, Borneo; Buton Strait; 281 to 735
fathoms). — Weber and Beaufort,

Fishes Indo Austral. Archip., vol. 5,
p. 83, fig. 18, 1929 (Weber's material).

Depth $8\frac{1}{2}$; head $6\frac{1}{3}$, width 2.
Snout $3\frac{4}{5}$ in head; eye $4\frac{1}{2}$, $1\frac{1}{5}$
in snout, $1\frac{2}{5}$ in interorbital;
maxillary reaches $\frac{3}{5}$ in eye,
length from front end 3 in head;
mandibular barbel $2\frac{4}{5}$ in eye;
teeth in rather coarse villiform
bands in jaws, lower bands
little broader than upper;
interorbital 3 in head, nearly
level or only slightly depressed
medially. Gill rakers 2 + 7 low
knobs on second arch, $\frac{1}{3}$ of
gill filaments, which $\frac{1}{2}$ of eye.

Scales 195? in median
lateral series in lateral line,
of which 20 before vent; 6
above, 17 below, 44 predorsal.
Scales all very finely rough
spinescent, rough to touch,

344. Endeavor Strait. December 22,
1908. Length 344 mm.

159, 161 to 163, 1292, 3888. Endeavor Strait.
December 23, 1908. Length 105 to 142 mm.

4867. Galera Bay, Mindoro. June 9, 1908.
Length 153 mm.

7272. Gigoro Point, ^{Quinabundan Bay,}
~~Quinabundan Island,~~
Samar. July 28, 1909. Length 132 mm.

1 example. Great Tobea Island, tide pool.
December 15, 1909. Length 30 mm.

429. Langa Point, Luzon. June 24, 1909.
Length 142 mm.

976. Ligpo Point. January 18, 1908.
Length 145 mm.

5969. Little Santa Cruz Island. May 26,
1908. Length 195 mm.

6025. Little Santa Cruz Island. May 28,
1908. Length 165 mm.

8842. Pangulabo Island. June 14, 1909. Length 163 mm.

8842. Makinog, Cariguen Island.

August 3, 1909. Length 196 mm.

smaller and less defined on muzzle and front of head. Scales without striae; apically about 5 rows of spinules; circuli moderate.

D. II, 8 — 155, second simple ray with front edge entire and ending in filament $1\frac{1}{2}$ in head; A. 135, fin much higher than second dorsal; pseudocaudal small short rudiment $\frac{1}{3}$ eye; pectoral rays I, 14, length $2\frac{1}{4}$ in head; ventral rays I, 6, fin 3 in head.

Nearly uniform chocolate brown, head darker or dusky, nearly blackish brown below. Iris dark gray. Inside mouth and gill opening black. Fins all pale brown.

497
General color of side slaty, with
slight purplish tinge. Iris red. Bar behind
eye joins fellow behind ventrals and
continues as median orange stripe on
belly. Dorsal spines orange, membranes
nearly colorless or pale yellowish; tip of
soft dorsal, including vertical edge
blackish, then dusky followed by narrow
paler line and dark margin to orange
beneath; dusky bar crosses caudal
peduncle as pale bar reaching on to
anal. Anal margin first dusky
hyaline, then narrowly pale submarginally.
Adjoining black to broader orange.
End of caudal dusky hyaline for
width equal to pupil, with narrower
pale yellow submarginal bar, then
trilinear bar with central line orange
brown and other 2 black. Dull orange
stripe across pectoral base and opercle flap.

East Indies, Philippines, Japan. ¹⁸⁴⁹

U. S. N. M., No. 76875.

Albatross Collection.

Length 120? mm. In poor preservation.

U. S. N. M., No. 77240.

In 505 fathoms.

Albatross Collection (D. 5080).

Length 448 mm.

875, 10323. Balikian Bay, Lubang Island. July 17, 1908. Length 94 to 165 mm.

4732. Batan Island. June 5, 1909. Length 124 mm.

4760. Biri Channel. June 2, 1909. Length 128 mm.

996. Bubuan Island. February 14, 1908. Length 168 mm.

619, 620, 1098. Bugubuk Island. January 5, 1909. Length 43 to 127 mm.

1245. Candaraman Island. January 4, 1909. Length 114 mm.

602. Casagoran, Maluan Island. July 27, 1909. Length 131 mm.

251 [1009]. Caxisigan Island, near Balabac Island. January 2, 1909. Length 122 mm. Bleeker's figure shows reds near contour of fins too bright, scarcely appearing at all on caudal peduncle except at front. No yellow crescent bar.

Genus Cetomurus Günther

Cetomurus Günther, Rep. Voy. Challenger, vol. 22, p. (124) 143, 1887. (Type Coryphaenoides crassiceps Günther, monotypic.)

Body with very short trunk and narrow, slender, tapering tail. Head very large, thick, especially forward. Snout short, broad, deep. Eye small, lateral, advanced. Mouth small, inferior. Mandibular barbel small, short. Teeth in villiform narrow bands in jaws. Branchiostegals 7. Pyloric coeca moderate. A series of enlarged scales along dorsal and anal fin bases. Scales small, villose. Head entirely covered with villose scales. Dorsal advanced, on back of head. Anal much higher than second dorsal. Paired fins well developed.

1851

macrurus microps Vaillant, which
I have not located, is given in
the list of doubtful forms by
Gilbert and Hubbs.

'Proc. U. S. Nat. Mus., vol. 51, pp. 146, 147
1916 (name).

401

1140. Mansalay Bay. June 4, 1908.
Length 79 mm.

1132, 1133, 16155. Mantacao Island, west
coast of Bohol. April 8, 1908. Length 62 to 73 mm.

1034. Masamal Bay, Arinalasag Island.
June 12, 1909. Length 60 mm.

1082. Masbate Reef, Masbate. April 20,
1908. Length 68 mm.

915 and 916. Nabatas Point, Samar Island.
July 24, 1909. Length 85 mm.

388 and 3605. Near Palag Bay, Luzon.
June 16, 1909. Length 52 to 63 mm.

360 and 361, 15352. Pagapas Bay, Luzon.
February 20, 1909. Length 85 to 97 mm.

1315. Polloc. May 23, 1908. Length 70 mm.

353 and 354. Port Caltoona. December 15,
1908. Length 75 to 77 mm.

731. Port Galera. June 9, 1908. Length 75 mm.

1017. Port Matabi. November 22, 1908. Length

80 mm.

Cetomurus globiceps (Vaillant)

Macrurus globiceps Vaillant, La Nature,
no. 560, 1884, p. (type locality:

— Günther, Rep. Voy. Challenger, vol.
22, p. 143, 1887 (reference).

Macrurus (Cetomurus) globiceps Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
p. 391, 1906 (reference). — Murray and

Hjort, Depths of the Ocean, p. 398, fig. 271,
1912 (west of Canaries, 1365 meters).

Hymenocephalus globiceps Vaillant,
Expéd. Sci. Travailleur et Talisman,
Poiss., pp. 214, 386¹⁸⁸⁶ (on Vaillant, pl. 20,
figs. 1a-e). — Goode and Bean, Oceanic
Ichth., p. 411, pl. 98, fig. 344, 1895 (copied).

— Vaillant, Rés. Camp. Sci. Monaco, vol.
52, p. 134, 1919 (lat. $36^{\circ}55'N$, long. $22^{\circ}22'$
 $45''W$, 4261 meters).

Genus Libyssicola Goode and Bean

Libyssicola Goode and Bean, Oceanic Ichth., p. 417, 1895. (Type macrurus macrochir Günther, monotypic.)

^{usually less than head,}
^{Body} short, compressed, tail long and tapering. Head compressed, rather large. Snout ^{projecting, longer} short, obtuse. Preoral short. Mouth wide, lateral, ^{inferior, sometimes} subterminal. Mandibular barbel ^{present, often} very small. Teeth ^{in upper jaw bands, varying} above to 2 or 3 irregular series, ^{or} below, uniserial or irregularly biserial. Interorbital wide, flat. Suborbital ridge continuous to preopercle. Median rostral, occipital and postorbital ridges developed. Gill rakers few low spinescent tubercles on second ^{gill} arch. Branchiostegals 6. Pyloric coeca 29 to 31. Scales with 8 to 10 apical ^{spines, sometimes in graining or approx. parallel, drooping or} finely crenulated, radiating apical ridges, not extended beyond scale edge. Second simple dorsal ray pungent, entire or smooth, ^{often ends in filament} interdorsal space long. Dorsal, ventral and pectoral

1853

Cetomurus globiceps Garman, Mem.
Mus. Comp. Zool., vol. 24, p. 395, 1899
(reference). — Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 146,
1916 (reference).

Hymenocephalus crassiceps (not
Günther) Vaillant, Expéd. Sci. Travailleur
et Talisman, Poiss., p. 214, pl. 20, figs.
1a-e, 1888 (Gulf of Gascony; Loudan;
off Azores; 139 to 2995 meters).

origins nearly in same vertical plane,
close behind head. Pectoral ^{with 13 to 19} longer
branched rays. Ventral with 5 or 6 branched rays.
than first dorsal or ventral, spatulate.
Vent close to or inside pelvic anal. One or two
Large fossa before anus, with well
pigmented glandular body.

One species.

outer simple ray filamentous
or somewhat prokaryotic, inserted
before pectorals.

A large genus of which half the species known
from the East I. region. Though world wide in
warm seas ⁱⁿ depths of from 70 to 200 meters ^{are} usually
found in depths of 300 meters or less. Likelihood
when extensive ^{depth} collections are made in ^{these} little
known waters many more species will ultimately be
found.

Cetomurus crassiceps (Günther) ¹⁸⁵⁴

Coryphaenoides crassiceps Günther, Ann.
Mag. Nat. Hist., ser. 5, vol. 2, p. 25, 1878
(type locality: north of Kermadec Islands,
520 to 650 fathoms).

Macurus crassiceps Günther, Rep. Voy.
Challenger, vol. 22, p. 143, pl. 37, 1887
(type).

Macurus (Cetomurus) crassiceps Brauer,
Deutsch. Tiefsee Exped. Valdivia, vol. 15,
p. 391, 1906 (reference).

Cetomurus crassiceps Goode and Bean,
Oceanic Ichth., p. 411, 1895 (name). —

Garman, Mem. Mus. Comp. Zool., vol. 24, p.
395, 1899 (reference). — Waite, Rec.
Canterbury Mus., vol. 1, no. 1, p. 17, April
25, 1907 (reference). — Gilbert and Hubbs,

Proc. U. S. Nat. Mus., vol. 51, p. 146, 1906
(name).

Cetomurus robustus Gilbert and Hubbs

Cetomurus robustus Gilbert and Hubbs,
 Proc. U. S. Nat. Mus., vol. 51, p. (146) 207,
 pl. 11, fig. 2, 1916 (type locality: off
 east coast of central Hondo, 649 fathoms);
 Bull. U. S. Nat. Mus., no. 100, vol. 1, p.
 560, 1920 (Gulf of Tomini, Celebes;
 south Patiente Strait; Gulf of Boni;
 525 to 845 fathoms).
 to $7\frac{4}{5}$

Depth $6\frac{1}{3}$ (to end of broken tail);
 head $5\frac{1}{4}$ to 6, width $1\frac{9}{10}$ to 2. Snout
 3 to 4 in head; eye 4 to $4\frac{1}{2}$, 1 to $1\frac{2}{5}$ in
 snout, $1\frac{3}{5}$ to $1\frac{4}{5}$ in interorbital;
 small, feeble mandibular barbel $\frac{1}{7}$ to
 $\frac{1}{6}$ of eye; maxillary reaches $\frac{2}{5}$ to $\frac{1}{2}$
 in eye, length from front end $3\frac{1}{8}$ to 4.
 in head; teeth fine, even, in
 villiform bands in jaws, 7 or 8 irregular
 bands above and 4 or 5 below;
 interorbital $2\frac{1}{5}$ to $2\frac{1}{2}$, low, with
 uneven depressions. Gill rakers 0 + 11
 short spinescent knobs on second
 arch, $\frac{1}{2}$ of gill filaments, which $\frac{1}{4}$ of eye.

Scales 180? in lateral line to end of broken tail, of which 8 forward of vent; 12? above, 38 below, 45 predorsal. Scales all adherent, finely spinescent or rough velvety to touch, equally small on head as on body. Scales with 5 to 10 slender erect spinules apically; circuli moderate.

D. III, 9 — 120? (to end of broken tail), second simple ray slender, with row of small well spaced denticles on front edge and (damaged) $1\frac{3}{4}$ to $2\frac{1}{8}$? in head; interdorsal length $2\frac{7}{8}$ to $3\frac{1}{3}$; A. 119? (to end of broken tail), fin much deeper than second dorsal; pectoral rays I, 16, (damaged) $2\frac{4}{5}$? to 3? in head; ventral I, 9, (damaged) 4? to $5\frac{1}{2}$?

728 and 943. Cebu market. April 5, 1908.

Length 73 to 82 mm.

1145. Cebu market. April 6, 1908. Length 86 mm.

345 to 348, 9667, 9668. Endeavor Strait.

December 22, 1908. Length 64 to 82 mm.

1131 and 9856. Endeavor Strait, December 23, 1908. Length 80 to 84 mm.

420. Great Tobea Island. December 14, 1909. Length 60 mm.

419. Great Tobea Island. December 15, 1909. Length 64 mm.

799 and 959. Langa Point, Luzon. June 24, 1909. Length 72 to 77 mm.

335 and 336, 21847. Limboner Cove, Luzon. February 8, 1909. Length 70 to 97 mm.

7968. Little Santa Cruz Island. May 28, 1908. Length 81 mm.

810, 3886, 21095. Maculabo Island. June 14, 1909. Length 55 to 80 mm.

1258. Makesi Island. April 5, 1909. Length 77 mm.

Brown, becoming dark neutral gray on jaws, under surface of head, opercles, breast and belly, edges of branchiostegal membranes black. Inside mouth and gill opening black. Fins brownish, ventrals darker. Vent blackish.

Japan.

399

166, 284, 462, 614, 615, 3611. Busin Harbor.
March 8, 1909. Length 39 to 72 mm.

860 to 863, 869 to 871, 971, 972, 4775. Busin
Harbor. April 22, 1908. Length 43 to 73 mm.

885, 886, 4847, 4848. Camarino Island near
Daet. June 15, 1909. Length 57 to 65 mm.

857 to 859. Capamaypungan Point. May 9,
1908. Length 70 to 74 mm.

3916, 3917, 12733. Capulaan Bay, Pugbilao
Island. February 24, 1909. Length 65 to 80 mm.

22807. Cataingan Bay, Masbate. April 18,
1908. Length 62 mm.

4824. Cataingan Bay. April 17, 1908.
Length 55 mm.

828 to 839, 1095. Catbalogan. April 15, 1908.
Length 66 to 90 mm.

520 to 523. Catbalogan. April 16, 1908.
Length 69 to 103 mm.

659, 3588 to 3590. Canmahala Bay, Ragay Gulf.
March 11, 1909. Length 57 to 76 mm.

U. S. N. M., No. 76870.

1858

In 649 fathoms.

Albatross Collection (D. 4971). Length
285 mm to end of broken tail. Type.

U. S. N. M., No. 76871.

In 649 fathoms.

Albatross Collection (D. 4971). Length
260 to 280 mm. 2 paratypes.

U. S. N. M., No. 76874.

In 600 fathoms. August 30, 1906.

Albatross Collection (D. 4973). Length
118? mm to end of broken tail.

378
1279. Alimango Bay, Burias Island.
March 5, 1909. Length 87 mm.

16007. Alimango Bay. June 5, 1909.
Length 76 mm.

824 to 827. Batanaman Island. June 12,
1909. Length 63 to 72 mm.

689, 692, 3624 to 3627, 15810. Batanaman
Island. June 13, 1909. Length 55 to 87 mm.

4841 and 4842. Beacon Reef, Catbalogan,
Samar Island. April 16, 1909. Length 94 mm.

4746, 10851. Biri Channel. June 1, 1909.
Length 39 to 49 mm.

3595, 3603, 4761. Biri Channel. June 2,
1909. Length 65 to 77 mm.

470 and 1052. Bolalo Bay, Palawan Island.
December 21, 1908. Length 74 to 75 mm.

1 example. Brang Bay, Talajit Island.
March 15, 1909. Length 88 mm.

3602, 15185 to 15187, 15306. Busin Harbor,
Burias Island. March 7, 1909. Length 61 to 74 mm.

ateleobrachium = a young
macrurid (probably acrolepis
Bean).

Johnson, Nyt Magazin
for Naturvidenskaberne,
vol. 65, p. 239, 1927.

1859

Genus Ateleobrachium Gilbert and Burke

Ateleobrachium Gilbert and Burke,
Bull. Bur. Fisher., vol. 30, p. 94, 1910
(1912). (Type Ateleobrachium pterotum
Gilbert and Burke, orthotypic.)

Body robust, short and deep anteriorly, tapering to long slender tail. Head large, long as trunk. Snout short. Eye large, anterior. Mouth large, lower jaw protruding. Barbel present, minute. Teeth fine, in narrow bands in jaws, none on palate. Gill rakers short, few. Scales not evident. First dorsal very high, nearly long as combined head and trunk. Second dorsal begins close behind first. Anal begins behind second dorsal fin, much higher anteriorly. Pectoral on slender and rather long base, short rays on end of terminal flap. Ventral very long, nearly equals first dorsal.

Possibly postlarval stage.

1960

Ateleobrachium pterotum Gilbert and Burke

Ateleobrachium pterotum Gilbert and Burke,
Bull. Bur. Fisher., vol. 30, p. 94, fig.
37, 1910 (1912) (type locality: off
Avatcha Bay, east Kamchatka, 300
fathoms). — Gilbert and Hubbs,
Proc. U. S. Nat. Mus., vol. 51, p. 147,
1916 (reference).

Depth $6\frac{3}{4}$? (to end of broken tail);
head $5\frac{1}{4}$, width $2\frac{1}{10}$. Snout $4\frac{2}{5}$
in head from snout tip; eye $3\frac{2}{3}$,
equals snout or interorbital;
maxillary reaches $\frac{3}{4}$ in eye or
opposite hind pupil edge, length
 $2\frac{1}{4}$ in head from snout tip;
minute, even, villiform teeth in
bands in narrow jaws; interorbital
 $4\frac{1}{4}$ in head, low, narrow. Gill
rakers 2 + 9 short knobs on second
arch, $\frac{1}{3}$ of gill filaments, which
 $1\frac{1}{4}$ in eye.

Scales not evident (not shown
on Gilbert and Burke's figure).

D. I, 8 — 76? (to end of broken tail); A. 74? (to end of broken tail); pectoral rays I, 16; ventral rays I, 6.

Brownish. Iris gray. Fins pale or whitish. Belly blackish. Inside mouth and gill-opening pale.

Kamchatka.

U. S. N. M., No. 74398.

Albatross Collection (D. 4797). Length 70 mm to end of broken tail.

down to eye and below much wider across lower surface of head; with age on cheeks broad even widens to extend across opercle over on front of opercle, though in young scarcely extended behind hind eye edge. Edge of soft dorsal narrowly black. Anal with pale edge and blackish submarginal line. Hind caudal edge pale, with dusky narrow, submarginal line.

Paired fins brown.

Black ocellus superiorly on soft dorsal, or on upper half medially, about size of eye in young, with age long as snout.

Red Sea, Zanzibar, Mozambique, Mauritius, Reunion, Seychelles, India, Nicobars, East Indies, China, Micronesia, Melanesia, Polynesia. The elongated dorsal filament is the accompaniment of age, and quite variable!